



A. Dean and Jean M. Larsen
Yellowstone Park Collection



F 595 .S9 1879

BRIGHAM YOUNG UNIVERSITY



3 1197 22292 2160

Price, 50 Cents.

"YONCE THE MISSOURI,

UPPER RAPIDS.

THE ROCKIES BEYOND

OR A SUNNY DAY ON THE

UNION PACIFIC RR

& BRANCHES

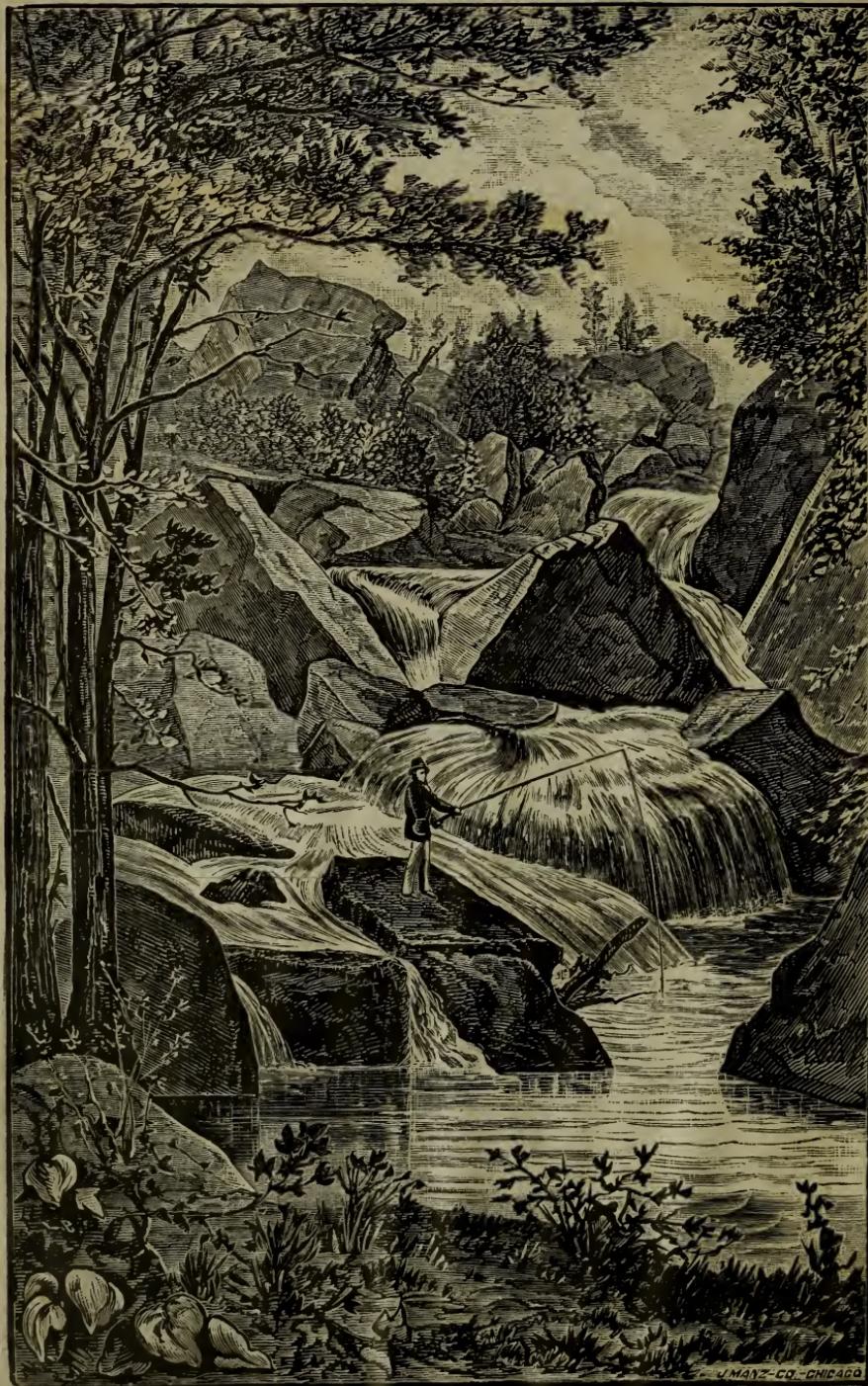
Robt. E. D. Brown

T. Falk

J. H. Bond
Sc.

SALT LAKE CITY, UTAH

OMAHA



WHITEWOOD FALLS, BLACK HILLS.

REACHED VIA UNION PACIFIC RAILROAD AND SIDNEY STAGE LINE.

TO THE ROCKIES AND BEYOND,

OR A SUMMER ON THE

UNION PACIFIC RAILROAD AND BRANCHES.

SAUNTERINGS IN THE POPULAR HEALTH, PLEASURE, AND
HUNTING RESORTS OF

NEBRASKA, DAKOTA, WYOMING, COLORADO, UTAH, IDAHO,
OREGON, WASHINGTON AND MONTANA,

WITH COMPLETE DESCRIPTIONS OF THE

BLACK HILLS, BIG HORN, LEADVILLE AND SAN JUAN REGIONS, AND
SPECIAL ARTICLES ON STOCK RAISING, FARMING, MIN-
ING, LUMBERING AND KINDRED INDUSTRIES
OF THE TRANS-MISSOURI REGION.

BY ROBERT E. STRAHORN ("ALTER EGO")

OF THE WESTERN PRESS.

Jas. D. Welsh.

SECOND EDITION, REVISED AND ENLARGED.

OMAHA:
THE NEW WEST PUBLISHING COMPANY.

OMAHA REPUBLICAN PRINT.

1879.

INTRODUCTION TO THE SECOND EDITION.

Since the first appearance of "To The Rockies and Beyond" in 1878, developments in the wide field outlined in its pages have bordered upon the marvelous. The name LEADVILLE has thrilled all America and claimed attention from lands beyond the seas, while our far NORTHWEST, where Orient now greets Occident, beams with a life unthought of twelve months ago. COLORADO, IDAHO, MONTANA, OREGON and WASHINGTON are the grand magnets upon our far western area to-day. Their unparalleled progress during the past year, and the constantly growing, earnest demand for intelligence concerning them is sufficient excuse for the enlargement and revision of this work. Nearly 100 fresh pages* are added, special attention being called to those devoted to Leadville, Montana, and the Snake and Salmon River Regions.

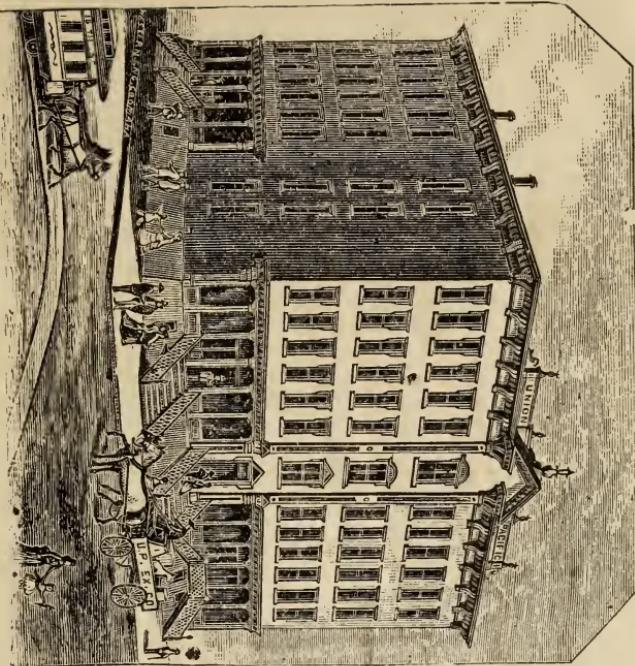
Reiterating a cherished desire to pleasantly introduce all classes of readers to the great region lying beyond the Missouri, to reliably point out the way for tens of thousands of inquiring homeseekers and tourists and to convey an idea of the glories of far west climate and scenery or the delightful experiences of mountaineering, the writer also wishes each *voyageur* as rich a fruition of pleasure in journeyings toward sunset as he himself enjoyed in his second "Summer on the Union Pacific Railroad and Branches."

COPYRIGHTED 1879.

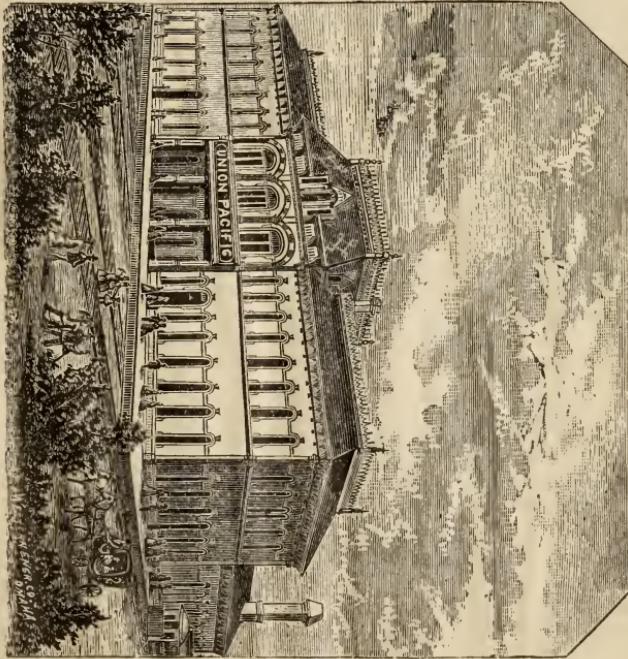
BY ROBERT E. STRAHORN.

U.P.B.

HEADQUARTERS UNION PACIFIC RAILROAD, OMAHA



UNION PACIFIC DEPOT, COUNCIL BLUFFS.



CONTENTS.

CHAPTER I.

OMAHA AND THE PLATTE VALLEY—Marvelous Growth of Nebraska—The Land of Cheap Homes “for the Million”—Hunting Along the Line of the Union Pacific—The Nation’s Pasture Lands—Raising Cattle at the Simple Expense of Herding and Branding—How the “Cattle Kings” Make their Thirty per Cent per Annum.....	5
---	---

CHAPTER II.

WYOMING AND THE BLACK HILLS—The Wealth and Wonders of an Average Western Commonwealth—The Thriving City of Cheyenne—A Jaunt to the Northern Eldorado—The Mines, Farming Lands, Forests and Cities of the Black Hills—\$4,000,000 in Gold in 1878 from Black Hills Bonanzas—Routes, Distances, Expenses of Living, Wages, etc.—The Big Horn Region; Its Mountains, Rivers, Hunting Grounds and Mineral Prospects.	14
--	----

CHAPTER III.

INTO THE AMERICAN SWITZERLAND—Wealth and Development in Colorado—The Giant Young Railway Leading Thither—Hunting and Fishing Along the Cache la Poudre—Estes Park and Long’s Peak—Boulder; its Thrift, its Rich Mines and Beautiful Scenery—Golden and Clear Creek Cañon—Among the Colorado Gold Mines—Over to the Silver Veins of Georgetown—Middle Park—Denver, Southern Colorado and the San Juan Region—New Mexico.....	34
---	----

CHAPTER IV.

WESTWARD TO UTAH—Laramie Plains and North Park—Mining, Wool Growing, Dairying and Lumbering—The Great Laramie Soda Beds and Marble Deposits—A Week’s Hunt in North Park—Rawlins and Snake River Valley—The Ferris and Seminole Mines—Rock Springs Coal Mines—Green River City and the Wind River Country—Evanston—Lumbering and “Ranching” Along Bear River—Fuel for the Trans-Missouri Region—Weber and Echo Cañons.....	72
---	----

CHAPTER V.

UTAH TERRITORY—Salt Lake City and the Great Dead Sea—Among the Little Cottonwood and Bingham Cañon Mines—Through American Fork Cañon—Utah Lake and its Beautiful Valley—Southern Utah, Nevada and Arizona—The Natural Route to the Great Southwest—To Great Salt Lake and the Stockton Mines—Salt Water Bathing in the Heart of the Rockies—America’s Greatest Salt Mine and its Utilization.....	90
---	----

CHAPTER VI.

NORTHERN UTAH, IDAHO AND OREGON—The Most Important Narrow Gauge Railway in the West, and the Region it Penetrates—Utah and Idaho Hot Springs—A Placer Mine Occupying 400 Miles of Snake River Bars—The Salmon River Region and Idaho Salt Works—Extent, Resources and Climate of Idaho, Oregon and Washington Territories.	117
--	-----

CHAPTER VII.

MONTANA TERRITORY—Facts and Experiences on the Farming, Stock Raising, Mining, Lumbering, and Other Industries—Interesting Notes on Climate, Scenery, Game, Fish, and Mineral Springs—Routes, Distances, Rates of Fare, Expenses of Living, Wages, Means of Acquiring Homes and Other Information Applicable to Wants of Capitalists, Homeseekers, or Tourists—Montana Clearly the Empire of the Great Northwest.....	136
---	-----

CHAPTER VIII.

YELLOWSTONE NATIONAL PARK.—The Geysers, Lakes, Cañons, Falls, Springs and other Wonders of the Nation’s Pleasure Ground—Game and Fish—The Romantic Madison Valley or Henry Lake Route and Distances on the trails and roads in the Park—Some Points about Outfitting—Aboard the Palace Car in the morning, and Trout and Tea in sight of “Old Faithful” at night.....	201
---	-----

APPENDIX TO SECOND EDITION.

LEADVILLE THE BONANZA CAMP—History, Extent and Wealth of the Carbonate Belt—Marvelous Growth, Real Estate and Rents—The “Tenderfoot” of yesterday, the Millionaire of to-day—Employment and Wages, Societies, Churches, Schools, Etc.—Expenses of Living and Routes.....	214
--	-----

TO THE ROCKIES AND BEYOND.

CHAPTER I.

WEST FROM THE MISSOURI—THE GREAT PLATTE VALLEY AND THE NATION'S PASTURE LANDS.

“*To the Rockies and beyond!*” was our final exclamation. It didn’t strike right and left like a bolt in the clouds, because we had read and talked the matter over carefully in our quiet prairie home for months. We had taken pains to learn that this was a royal country—this western half of our continent—full of wonders and wealth, and we were just at that stage so intensely choric in America which impelled us to go *somewhere*. We—my friends and I—had no money to fritter away in aimless travel. “Going west” meant a world of things to us besides our own gratification, because upon our experience depended the founding of homes and the investment of others’ dollars.

To sum up, we determined that this should be the great instructive and enjoyable era of our busy lives. We wanted to see the broadest and richest areas of western farmlands, the vast winter and summer grazing regions, the world’s finest hunting grounds. We would dive into the mysteries of the deepest gold and silver mines, explore the most wonderful coal measures and “rough it” in the wildest forests. We would never think of “going west” without passing over the mightiest mountains, through the grandest cañons, and along the largest lakes and rivers. Neither could we deny ourselves the supreme pleasures of breathing the most invigorating atmosphere, plunging into the famous hot springs, or imbibing the delicious and health-giving mineral waters. Of course the largest and most beautiful cities, as well as the liveliest mining camps must be in our pathway, for there is where the buoyant, sinewy and thriving west beams out in greatest business venture and crystallizes into finest social culture.

All this in one short summer!

Our demands would have been less extravagant a few years ago, but in this era of railways we stood sweltering at our rendezvous on the heated pavements of Chicago, took a forty-eight hour stretch of imagination and were whiffing ice-tempered breezes at the base of the Rocky Mountains! Three of the finest railways in America were ready at Chicago to take us “neck and neck” to the Missouri river at Omaha. Never hesitate about deciding *which* you will take, reader; “go it blind” on either and you will find railroad travel over the broad prairie states a luxury.

We made Omaha our final starting point on the great sea of plain because, in looking over our programme, we found there was but *one* route which covered all the ground, and that we soon learned to call “The Highway of Conti-

nents"—the Union Pacific Railway. While whirling over the plains and through the mountains in its luxuriant palace cars we could watch the tide of commerce of the world. The wealth of European and Asiatic countries, of Pacific's distant isles and of our own grand America, could be seen concentrated and pouring over these iron lines. Here and nowhere else could we follow "That western trail of immigration which bursts into states and empires as it moves."

At Omaha was found enough to engross any visitor's attention and interest for a week, but a few hours had to suffice us. It is a fitting entry to the boundless west—a splendid western city, where the tourist from the east gets his first refreshing glimpses of the vim and "snap," born of lively growth and competition, which he will encounter everywhere toward sunset. There are dozens of noble monuments to this invincible enterprise visible, to say nothing of the thousands of smaller and less noticeable ones which we know are contributing their share to make Omaha what rivals already yield her to be—the metropolis of the northwestern states and territories. Crossing the Missouri on one of the finest iron bridges in the world, we noticed, down to the right, the great smelting works, which turn out more of the precious metals than all other similar works in the United States combined, save one. Their product was something like \$5,000,000 in 1877, and the beautiful bars of silver and gold there on exhibition add keen zest to promises of underground explorations among the glittering mineral veins. A little farther up the river bank, covering thirty acres of ground, are the extensive Union Pacific Railway shops, which give employment to nearly a regiment of lusty mechanics, and turn out anything in the line of railroad equipment, from the smallest bolt to the handsomest passenger car. Just at the end of the bridge, on the left, is a large and lively distilling establishment, which, for the privilege of turning out immense quantities of the "old reliable" beverage, pays a tax of over half a million dollars a year. Crowning the wooded and picturesque bluffs in plain sight ahead and commanding wide view of river and valley, are the splendid school houses—one of these costing \$250,000—and many of the most elegant residences. Then, under the shelter of the bluffs, but still high above the river, are the long rows of solid business blocks, the fine public buildings and the dozen or more church spires. The post-office and custom-house combined, the Grand Central Hotel, Union Pacific headquarters and many other buildings are noticeable for their size and beauty of architecture. The Union Pacific building is pronounced one of the finest railway headquarter offices in the world, and the Grand Central Hotel—well, it is the largest and most elegant between Chicago and San Francisco, and almost won us to a longer sojourn by its faultless appointments.

Nine railways practically terminate at Omaha, rendering her the center of a railway system which could hardly be excelled, and bringing the trade and travel of wide and productive scopes of country, north, south, east and west. Then there is the cheap steam transportation afforded by the Missouri river and her tributaries, by which over three thousand miles of water line along Nebraska, Iowa, Dakota and Montana are made to contribute to the general prosperity. The additional United States branch mint, which is to be located in the near future, will undoubtedly go to Omaha if unexcelled natural auxiliaries to its successful operation are the requisites. Many unanswerable arguments are submitted upon this question, but we can only notice one in addition to the above facts showing how wonderfully the city holds the key to the wealth of

half a dozen states and territories. This item is simply that Omaha has always been the gateway through which two-thirds of the entire mineral yield of the United States has passed. Base bullion and ore of the value of \$10,000,000 was shipped hither from the western mines as freight over the Union Pacific Railway in 1877, while gold and silver bullion and coin to the amount of over \$50,000,000 reached this point by Union Pacific Express during the same period. It therefore appears that Omaha handled \$60,000,000 of the total amount of \$98,000,000 of gold and silver produced in the United States in 1877. We could see nothing accidental about this. We had entered the great central belt of wealth, industry and population; the greatest of all railways had appropriated the field, and by making this its outlet had laid the foundation for enterprises which, even in this fast age, are scarcely foreshadowed.

To indicate the scope of business at Omaha we may add that 2,000,000 bushels of grain and 95,500 head of cattle were received during 1877. Over \$38,000,000 of exchange were sold by the banks during the same period, and \$800,000 were invested in improvements. For fear some reader may think us a little extravagant in our statement that we could watch the commerce of nations pouring through this outlet over the Union Pacific Railway, we will mention the simple items of silk and tea shipments from China and Japan. We could see *train loads* of tea arrive here from the "Flowery Kingdom," *via* the Pacific Ocean and San Francisco, and importations of silk by the car load. Nearly 1,000 cars of tea were received during 1877, direct from celestial "first hands."

Up the Platte Valley.—Eager for the start and yet unsatisfied with such a mere glimpse of Omaha, we took quarters in the luxuriant palace cars of the Union Pacific and sped westward. The train was long, well filled, and rolled over the bands of steel with the power and seeming pride of a very monarch of pioneers. Getting acquainted with fellow passengers we found here an anxious home-seeker, tired of the worn-out soils, enervating atmosphere and "barren opportunities" of his crowded native state, and determined on planting himself anew in the broader, more attractive fields of the bright young west; there a pale and nervous health-seeker, full of doubt and hope combined, who evidently *needed* Colorado sunshine and the mountain air; yonder a Wyoming cattle dealer, satisfied with the world and himself, because he had made his pile on the steer of the period; and then here an ex-surveyor-general of Nebraska, whose judgment on western resources is said to be next to faultless and who was taking large quartz mills into the Black Hills, where he declares there are millions of wealth in sight. We also had on board a representative of the government on his way to China—for, be it remembered, this was the "Highway of Nations"; Californians returning to their beautiful "Golden Gate"; pleasure-seekers going to lead aimless lives at the fashionable Colorado watering places, or, mayhap, intending to do some real genuine "roughing" among the mountains and in the forests, and, among the dozens of others, army officers on their way to the frontier to do their thankless duty of making the original owners of the country believe they don't own anything.

Nebraska and the Platte Valley have been wonderfully "written up" since the advent of railroads, and we make no extensive notes where the ground has already been so thoroughly reviewed. Passing along, however, we obtained some facts concerning resources and recent progress. Eleven years ago these beautiful valley landscapes—in which thousands of productive farms, fine farm-

houses, blossoming orchards and thriving cities are now such grateful features —were smooth meadows and prairie uplands, with only here and there the stage station in sight. The change has been so rapid that the eleven years seemed stretched to fifty. In the whole of Nebraska there were only 50,000 people. The grand stimulus—the Union Pacific Railway—together with wonderful fertility of soil and other matchless resources, have swelled this little division into an army of 300,000 strong. In 1870 the population was 123,000; in 1872, 250,000, and from this up to the splendid body of producers of to-day. From the broad acres, which were scarcely "scratched" a dozen years ago, and where the Indian and buffalo were proud possessors, 12,000,000 bushels of wheat were produced in 1877, together with hundreds of tons of beef. It is estimated that this one great valley alone is capable of sustaining 3,000,000 of people. At this late day it is hardly necessary to tell of the fine crops of wheat, oats, corn, rye, barley and vegetables of every nature which are produced, or of the luscious fruits. Of the latter, one hundred different varieties from one county were on exhibition at Omaha for several weeks, and it is a matter of common knowledge that the American Pomological Society has awarded Nebraska the first premium over all states in the land for the largest and best display of fruits. Wheat yields as high as thirty bushels per acre and averages about twenty. No stumps or stones interfere with easy cultivation, grass grows luxuriantly enough for hay everywhere, if not molested, and the mowing machine will run for miles without encountering an obstruction. We could easily see that home-making here would be child's play compared with the same task in the backwoods or among the rocky uplands of the older states. Hundreds of thousands will yet find choice homesteads on the lands of the Union Pacific Railway, which border the track, and on tracts still held by the government. Lands can be obtained at prices ranging from \$2 to \$10 per acre, on long time, if desired, so that the frugal and industrious farmer, with a few hundred dollars to make needed improvements, can easily pay for his home from the products of the rich valley soil. Prospective settlers are assisted by the company in the way of cheap exploring tickets and colonists get the advantage of reduced freight rates. Very valuable information, covering this whole ground, is issued gratuitously to all by the Land Commissioner of the Union Pacific Railway, Omaha.

Fine Hunting.—While speeding along the Platte, the stream which kept us pleasant company for many miles, we were hourly tempted to forsake our iron trail by the near sight of different kinds of game. On the broad bosom of the river legions of wild geese and other water fowl find their coveted abiding place, and the hunter would be worse than novice who could not bag his dozens within sight of the track almost any day in spring or fall. The Elk Horn, Loup Fork, Wood river, Shell creek and other tributaries of the Platte in eastern and central Nebraska are little behind the parent stream in these strong attractions for the sportsman. Then, on the alternating grassy prairies and well-tilled fields, we frightened up large flocks of prairie chickens, and as we crossed the beautiful Elkhorn river, twenty-eight miles from Omaha, were told that the wooded banks there are the resorts for hundreds of coveys of quail. The deer still ventures within a dozen miles of Omaha, among the timbered bluffs bordering the river, but to enjoy first-class shooting for such noble game we strike out among the timbered ravines along the Platte and Loup, all the way from fifty to three

hundred miles westward. Buffalo, elk and antelope can easily be reached from many different points in the Platte valley. We kindled smouldering embers of "buck fever" in the hearts of numerous passengers and proved our faulty aim by often firing at bands of the latter from the platform of our Pullman.

For geese or chickens we learned that we should get off at North Bend, 61 miles; Schuyler, 75 miles; Columbus, 91 miles; or Clark's, 120 miles from Omaha; not because we couldn't find them in great plenty at almost every station, but because hotel accommodations are better at those places. Jackson, 99 miles; Kearney Junction, 195 miles; and North Platte, 291 miles from Omaha, are all favorite points of rendezvous for hunters of large game. Game is shipped by the wagon load from a number of the above places to Omaha and farther east. By camping out at Cozad, 245 miles from Omaha, our friends have found sport which will furnish a topic for winter-night talk for years to come. Buffalo, elk, antelope, deer, wild turkeys, geese, ducks and other wild fowl are here found in great abundance. Southward from 50 to 75 miles are the great buffalo ranges of the Republican Valley, where some of the most noted American and European Nimrods are distinguishing themselves every season. Board at these points ranges in price from \$1.50 to \$3 per day. Where camping out is necessary, team and guide, \$4 to \$6 per day.

THE GREAT WINTER GRAZING REGION.

At Grand Island, one hundred and fifty-four miles west of Omaha, we fairly entered the great grazing belt of the continent—that which affords sure sustenance for stock and a fair degree of safety without shelter the year round. We soon saw large herds of sleek cattle feeding upon this natural pasturage on every hand, and often mingling with bands of antelope and other game. From this west to the Pacific ocean, north into the British Possessions and to the southernmost limit of the continent, cattle graze and fatten summer and winter, needing no more attention to assure their growth and safety than the buffalo. Nearly all readers must understand that the grasses west of here cure where they grow, retaining all their wonderfully nutritious elements, and that different herbs unknown in the east also afford a perfect winter diet. Further, that the snows are light and dry, ever shifting before the prairie winds, and that sheltered and wooded valleys are conveniently interspersed, affording all the protection that cattle have ever seemed to need. It is readily seen, therefore, that in all this vast territory must be thousands upon thousands of opportunities for men to produce beef, after the nucleus for a herd is purchased, at the simple outlay of *herding and branding*. It is demonstrated by hundreds of reliable stockmen that the loss from all causes will not exceed two per cent of the entire herd per annum.

How the Business is Carried on.—This industry is one in which we have always felt the liveliest interest and one well worthy of elaboration here. A quite popular and profitable mode of handling cattle is that in which breeding is given little attention and buying and selling steers season after season takes the preference.* Two and three-year-old steers are purchased in Texas in the

* Facts and figures here given and in relation to Wyoming are partially adapted from a previous work of the writer, "*Wyoming, Black Hills and Big Horn Regions*," 250 pages, Robt. E. Strahorn, publisher, Cheyenne, Wyoming.

early summer at say \$12 and \$16 per head delivered on the line of the Union Pacific. With them are often purchased a few heifers and cows, which, upon being located on the range, are kept as a nucleus to assist in holding the strange animals bought each year within the limits of the range. A desirable ranch site is chosen, and as a rule the improvements made are much less expensive than those on regular breeding ranches. The cattle are kept upon these rich cured grasses during the winter, and during the summer following (one year from the date of their entry) the best three and four-year-olds are sold to local dealers or are consigned to eastern commission men. These well-conditioned Texans sell at an average of \$28 per head at any of the stations, leaving a profit of about \$10 per head. The few not fit for sale are left with the nucleus already referred to and held over for another season. The profits are at once reinvested in the manner first described, and the buying, pasturing and selling thus continued year after year. For parties who do not desire to continue in the industry more than a few years, this plan presents the strong inducement of not requiring so much preparation and expense in starting; while the rather "gypsy" fashion of conducting the enterprise admits of the settlement and termination of it without inconvenience at almost any time.

However, the breeding of cattle on this vast free range is as sure and probably as short a road to wealth as is offered by any legitimate enterprise under the sun. Texas yearlings, either sex, can be bought at almost any railroad point here at \$7.50 per head; two-year-olds, \$12; cows, \$13. A good ranch site, with necessary buildings and corrals, located within two days' drive of the railroad, can be secured for \$1,500. First-class herders (and others are dear at any price) can be readily obtained at an average of \$32.50 per month and board. Very close calculations, made by several competent informers, make the total expenses of keeping cattle each year, after the necessary permanent ranch improvements have been made, as follows: In herds of 1,000, per head, \$1.75; in herds of 5,000, \$1.40; in herds of 10,000, \$1. It is also reliably stated that such stock growers as J. W. Iliff, who graze over 25,000 head, figure their expenses down to from fifty to sixty cents per head per annum. Think of the average cattle man raising a steer and putting him on the market, a three-year-old, at a total expense of *four dollars and fifty cents*. Ten thousand dollars is considered a fair sum to start with in breeding cattle. We had access to the accounts of a thoroughly reliable breeder whose books exhibited an investment of \$15,000, covering a period of only five years. He purchased 1,000 Texas cows and the necessary number of short-horn sires. Sales of steers were only made the last two years, and the amounts realized were not reinvested. The closing of the account revealed a profit of \$68,000 for the five years' operations. This plan can only be appreciated and its grand possibilities realized by its being followed from five to ten years, and by the introduction of better blood into the herd.

Early in the summer of each year the great "round-ups" occur. All herdsmen, and frequently owners of stock, gather together in certain localities, and, with the most experienced and skillful stockmen for leaders, inaugurate a short season of the herdsmen's wildest revelry. Mounted upon their best ponies, the herdsmen swiftly scatter out across the range, gathering in every animal, and finally concentrating the property of perhaps a dozen prominent stock growers in one immense, excited herd. Passing near the ranches of respective owners, the animals are halted in a convenient location, and part of the cow-boys hold



SPEARFISH FALLS, BLACK HILLS.

REACHED VIA UNION PACIFIC R. R. AND SIDNEY STAGE LINE.

the mass while others ride through it, single out the "brand," or animal, belonging to the adjacent range or ranch, and separate it from the main body of cattle until none of that description are to be found. Moving along to the next man's range, the scene is repeated, and so continued until the cattle are divided. Then young stock is branded, marketable stock sometimes disposed of, and the cattle are again allowed their freedom. Five or ten thousand head are thus frequently gathered together, and during the round-up season men "camp out," wagons following the herd with provisions, blankets, etc.

Wonderful Profits.—A steady profit of twenty-five per cent per annum is really a common result. Forty and fifty per cent have been realized, but the writer who lays down such figures as an average is very liable to get his reputation involved. It is not uncommon for experienced stockmen, who know how to utilize every advantage, and to guard against nearly all discouragements, to do business for a time on capital borrowed at two per cent per month, and to make a good margin on the investment. The writer has in mind a gentleman whose large herds roam in southern Wyoming, who for five years has made the very handsome profit of forty per cent per annum. He has been especially judicious in his purchases and sales, exercised great care and judgment in the selection of a range, and in his system of ranch improvements, and has been so fortunate as to secure some of the best men on the plains to carry out the practical workings of his business. Constant supervision and study upon the part of the *owner* of stock is a grand point.

Room for Thousands.—The home and foreign market constantly grows stronger. The ratio of increase in population in America is far in excess of the increase in our supply of beef and mutton, and the exports of beef, mutton and live stock to Europe have increased in value from less than \$2,000,000 in 1876 to \$14,000,000 in 1877. That this western country can produce the beef, mutton and wool for all America, as well as for millions in the old world, is becoming an admitted fact, visionary as it would have seemed ten years ago. In this connection is a point generally overlooked. We should remember what myriads of graminivorous animals have fed upon these native grasses, and how slowly our herds are increasing in proportion to their decrease. Millions of buffalo, elk, antelope and deer have for centuries fattened on these same broad acres, and now, before the "march of empire," are steadily vanishing from the carpets of nutritious grasses. It is estimated by the most competent authority that over 15,000,000 buffalo alone have been killed on the western plains since 1870, the slaughter having become so fearful that legislation is invoked to prevent it. Even this vast herd of buffalo, which could make no perceptible impression on the boundless pasture lands, has not yet been half replaced by domestic flocks and herds. The numbers of cattle and sheep in the States and Territories directly tributary to the Union Pacific Railway are placed as follows:

	SHEEP.	CATTLE.
Nebraska.....	125,000	375,000
Colorado.....	800,000	450,000
Wyoming.....	100,000	175,000
Utah.....	350,000	290,000
Montana.....	150,000	250,000
 Totals.....	 1,525,000	 1,540,000

While these figures show the progress made under great discouragements in less than twenty years, and are very gratifying, they also open our eyes to the fact that the industry has but really commenced, that the field cannot be thoroughly utilized for many years, and that until it *is* utilized golden opportunities are everywhere open for the investment of small or large capital.

Julesburg and Cheyenne are the largest cattle shipping points, while Ogallala, Pine Bluffs, Sidney and North Platte, in Nebraska, are all noted for this line of business. There were about 1,000 car loads, or 20,000 head, shipped during 1877 from each of the two points first named. The business has developed wonderfully in the past five years, shipments showing a steady and rapid increase. As already stated, the total cattle shipments for the year eastward, over the Union Pacific, were about 95,000 head. Of this number one dealer, J. W. Iliff, has marketed 15,000, receiving at an average \$25 per head. Mr. Iliff is justly called the western "cattle king," for he owns over 50,000 head, and his range is 150 miles long by half as many wide. There are many others who own from 5,000 to 20,000 head of cattle, not one of which ever feeds a pound of grain or hay except to working stock.

Verily, visions of perennial pastures, marketable steers and plethoric purses have followed us to the end of our journey—yea, until we are prone to sell out the unproductive old possessions "back east," go to the western prairies and produce that for which the world pays its surest and greatest tribute—bread and beef. However, if we do all this, before we ever bridle the frisky Texas steer we will serve a twelvemonths' apprenticeship with some older hand. This business, like all others, requires careful study and will not run itself.

Sidney— 414 miles from Omaha, and near the western edge of Nebraska, has attained considerable importance as a point of outfitting and departure for the Black Hills gold fields. It is a lively, thriving place of about 1,000 inhabitants, possessing two of the best hotels in the state outside of Omaha, large outfitting and forwarding houses, and other necessary auxilaries to the Black Hills trade. One firm of freighters shipped two and a half million pounds of goods to the Hills in 1877, while smaller firms swelled the total to about 4,000,000 pounds. Deadwood is said to be 267 miles distant. The roads are first-class, lined with ranches and stopping places, and passing one military post, Camp Robinson, en route. Fare to Deadwood, \$30. Fine Concord coaches, carrying mails and express, leave daily, and land passengers at Deadwood in about fifty hours. Good antelope hunting can always be had within a few miles of Sidney. Among other aspirations of the town is its confidence in being made the southern terminus of the proposed Union Pacific and Black Hills Railway. Our trip to the northern Eldorado was by way of Cheyenne, and we necessarily make extended observations upon the region in pages following. Board in Sidney \$2 and \$4 per day in the two leading hotels.

CHAPTER II.

WYOMING AND THE BLACK HILLS—ROUTES TO THE NORTHERN ELDORADO—GOLD YIELD, ETC.

Soon after leaving Sidney the railroad enters the young and thriving territory of Wyoming. It covers an area of nearly 100,000 square miles, and, as we learn after thousands of miles of horseback travel within its limits, possesses a variety of resources rarely centered within the boundaries of one commonwealth. Forest and plain, mountain and valley, water-course and upland, unite to furnish the most accessible field for the speedy creation of a large and prosperous state. The grazing area proper aggregates 55,000 square miles, while much of the mountain surface, omitted in this estimate, is thickly carpeted during summer and fall with the most succulent and nutritious grasses. That portion susceptible of cultivation comprises some 15,000 square miles of bottom and uplands. The timber area is very extensive, covering nearly one third of the territory, and in coal Wyoming is the richest of all states or territories. In the 40,000 square miles of mountain area are vast deposits of gold and silver bearing ores, iron, copper, etc.

Eastern readers may not readily realize the extent of all this latent wealth in an average western commonwealth, and we will indulge in a few comparisons. Wyoming's grazing area is greater than the entire area of Kentucky, a state which in 1870, owned nearly 2,000,000 head of sheep and cattle, besides over 1,000,000 head of other live stock. The agricultural area here of virgin and fertile soil is greater than that of the states of Massachusetts and Connecticut combined, which, on their artificially fertilized soil, produce an average of 5,000,000 bushels of grain annually. Wyoming's forests cover more territory than those of the great lumbering state of Michigan, whose product in this line reaches a value of \$40,000,000 per annum. And her surface underlaid with strata after strata of coal exceeds that of the coal lands of Pennsylvania, whose yield in coal reaches \$50,000,000 or more annually. The population is estimated at only 28,000, while the valuation is placed at about \$11,000,000. There are three rail-ways, aggregating a length of over 500 miles, and six telegraph lines, aggregat-ing a length of 1,500 miles. Development, in every field, has always been retarded by depredations of the savages. These have until recently occupied the finest section of the territory; but now, through the well directed efforts of General Crook and his brother officers and men, the citizens have better prospects for permanent peace.

Wyoming is the huntsman's and angler's paradise. On her plains the bu-falo and antelope find an agreeable, all-the-year home; in her mountains the elk, deer mountain sheep, bear and mountain lion abound; and in her thousand crystal streams and lakes the gamiest and most delicate of all fish, the mountain trout, are always ready for the bait. Sage-hens, grouse and rabbits are found almost everywhere, while geese, ducks and wild fowl are native to nearly all the lakes and watercourses. The settler has no trouble in providing himself with the best wild meats the year round, and indeed often makes a good living by

hunting game for local markets. From the moment the tourist enters the territory until he departs, his bill of fare teems with these riches of forest, plain and river. Fur-bearing animals of almost every description are also taken by the hundreds of trappers who inhabit the frontier, and the number of beavers and wolves especially, which are annually trapped for their skins, is enormous. A day's ride from almost any station will take the Nimrod into hunting grounds of the best class.

The territory affords a rich field for the scientist. The most wonderful petrifactions and fossils which are among public and private collections in the East have been found here. Such natural curiosities as the garnet, topaz, jasper, agate, chalcedony, and rare crystallizations, are found in different sections. Mineral springs, fine scenery and sunny skies are not wanting to attract the health and pleasure seeker. The nation's own pleasure ground, the Yellowstone National Park, occupies the northwestern corner of the territory, and is in itself an attraction which must in the near future entice many hither. Of its wonders we shall say more in future pages.

Cheyenne.—516 miles west of Omaha, at an altitude of 6,041 feet above the sea, is Wyoming's bustling metropolis and capital city, Cheyenne. So far Cheyenne is much in the lead of all rivals as an outlet and supply point for the vast northwest, and no territorial city hereabouts can approach her for real, down-right enterprise, sagacious business management, or spirit of permanency. Three railways center here — Union Pacific, Colorado Central and Denver Pacific — and the energetic business men are doing their utmost to secure the coveted northern road leading either to the Black Hills or Montana, or, by double termini, controlling the trade of both. Already the heavy wholesale houses here are securing much of the northern and western trade which originally went to the cities of the East, and with their constantly enlarging facilities and liberal spirit this important index of prosperity still furnishes the brightest possible outlook.

A feature always refreshing and pleasing to the new comer here is the wonderful thrift, bustle, and unfaltering courage which is everywhere apparent. From the peanut vender on the street corner to the wholesale merchant we traced this same nerve, which in the west is said to "laugh at impossibilities." Of course we caught the infection, and were soon ready to embark in any number of prodigious enterprises. Then here we received our first really unmistakable blast of the mining atmosphere, which comes down strong and fresh from the Black Hills. Bronzed and enthusiastic miners are constantly arriving with glittering specimens from their "finds," while new seekers for treasure are bound northward on every coach, or are seen leaving by every other conceivable means of transportation. The bank windows and counters are always lined with tempting displays of yellow nuggets, huge retorts of gold from the Black Hills stamp mills, or fine dust from the rich gulches of that famous northland. Great trains of "prairie schooners" crowd around the forwarding houses, or are seen pulling out with stamp mills, other mining machinery, and miscellaneous supplies. Numerous Cheyenne citizens own stock in the mines, and quite a number have obtained property which pays very handsome dividends.

Cheyenne has a population of 4,500, is becoming quite solidly built, and exhibits as fine residences, public buildings and improvements generally, as any city on the Union Pacific, west of Omaha. The taxable wealth is about \$2,500,000, and improvements for the past two years have cost \$700,000. Indicating

the extent of business are the statements that over 80,000,000 pounds of freight were received here in 1876, and \$250,000 received during the same year at the railroad ticket office. The two banks sold exchange during 1877 to the amount of \$4,250,000, and bought \$1,200,000 worth of Black Hills gold dust. The three leading hotels registered 10,800 arrivals during 1877, and a dozen smaller houses probably did as much more. About 4,000,000 pounds of freight were forwarded from here to the Black Hills during the same year. During the six months ending June 30, 1877, the Cheyenne and Black Hills Stage Line—which is a model of its kind—forwarded over 3,000 passengers and 6,000 express packages to the Hills. This company has nearly \$200,000 invested in Concord coaches, fine stock, stage stations, etc.

Here the Colorado Central Branch of the Union Pacific Railway turns southward through the rich agricultural and mining districts of Colorado. Pullman palace cars run direct from Omaha to Denver, so that no trouble or delay is experienced in reaching Colorado's capital.

Hotels at Cheyenne—the Inter-Ocean, Railroad, and Dyer's—are not to be excelled in any city of twice the size. Rates are from \$3 to \$4 per day. The city is prolific in smaller and very comfortable houses, however, where the economically inclined can board at from \$6.50 to \$10 per week. Livery is cheap—from \$4 to \$7 per day; saddle ponies, \$2. Rents for five and six room cottages are \$30 to \$35 per month. Living expenses generally about 20 per cent higher than at points east of the Mississippi. Cheyenne has always been a good point for mechanics. Wages average about as follows: carpenters, \$2.75 per day; bricklayers, \$4; plasterers, \$3; salesmen, \$75 to \$125 per month; laborers \$25 per month and board. Those who desire to purchase their own teams for the transportation of supplies northward, can procure outfits to good advantage here, and supplies of every nature are always found in large stocks. The city has been a rendezvous for parties going to and returning from northern regions so long that its merchants have made a careful study of this branch. Following are prices of leading items which go to make up an outfit for the miner:

Team of two horses.....	\$100 to \$250
Team of two mules.....	200 " 300
Oxen, per yoke.....	80 " 100
Saddle horse.....	40 " 75
Saddle mule.....	40 " 60
Pack horse.....	40 " 60
Pack mule.....	40 " 50
Two-horse wagon.....	100 " 125
Four-horse wagon.....	125 " 150
Tent.....	25 " 40
Breech-loading rifle.....	35 " 50
Blankets, per pair	5 " 8
Flour.....	per sack, \$3 00 to \$4 50
Bacon.....	per lb., 15 " 16
Syrup.....	per gal., 75 " 1 25
Coffee, Rio.....	per lb., 26 " 30
Sugar.....	" 12½ " 15
Tea.....	" 60 " 1 50
Baking powders.....	" 45 " 50
Beans.....	" 6 " 7
Grain — corn.....	per cwt., 1 90 " 2 00
" oats.....	" 2 50 " 2 60

THE BLACK HILLS.

Enough time has elapsed since the discovery of gold in the Black Hills to thoroughly establish two very important facts: First, that deposits of both gold and silver of extraordinary richness and extent are there found; and, second, that the only really practicable routes to the Eldorado lead from the Union Pacific Railroad at the south. The road from Cheyenne passes northward through the best settled portions of Wyoming, where for years the finest herds have roamed, and where many occupied homesteads will compare favorably for the value and style of their improvements with those of any western state. The only line of telegraph to Deadwood is from here, and as before stated, the daily stage line is simply perfect. Freighting has here been rendered a mammoth as well as systematic business. There are over twenty large and reliable firms, running 200 wagons, engaged in the business. Then, counting in smaller firms, we find a total of 400 wagons, giving employment to as many men, and being able to easily move 2,000,000 pounds of freight at one loading. Freight rates to Deadwood are from \$3 to \$5 per hundred pounds, the price first named being the lowest for ox-team freights, and the higher price being the average for fast horses and mule trains. Below is a table of distances over the Cheyenne route. The measurements were made by odometer by Captain Stanton, Chief Engineer Department of the *Platte*:

From Cheyenne to	Miles.
Horse Creek.....	25.66
Phillip's, Chugwater Creek.....	47.86
Owen's, Chug Spring.....	66.13
Fort Laramie.....	88.28
Government Farm.....	103.22
Raw Hide Butte.....	116.50
Niobrara River.....	133.07
Hat Creek.....	147.80
Lance Creek.....	176.54
Cheyenne River.....	196.62
Beaver Creek.....	220.86
Cold Spring.....	242.61
Whitewood.....	263.79
Deadwood Postoffice.....	266.19

The highest altitude on the route is 6,509 feet. This observation is taken from an extreme summit in the Black Hills, a short distance from Spring Cañon, and about 230 miles from Cheyenne. The altitude of Deadwood is 4,640 feet. Fare, Cheyenne to Deadwood, \$30. We found eating stations and comfortable frontier hotels strung thickly along the entire route, and obtained tip-top meals at from fifty cents to one dollar each.

Pending the construction of the Black Hills branch of the Union Pacific Railway one *must* go by coach or private conveyance, and let us here remark that a forty-eight hour coach ride cannot be made more comfortably on any line in the country than on this one between Cheyenne and Deadwood. Fort Laramie, around which cluster thousands of interesting points of frontier history, is passed 88 miles north of Cheyenne. A few miles further on the route crosses the North Platte by a splendid iron bridge. Niobrara River, Hat Creek, Lance Creek, Cheyenne River and Beaver Creek are all crossed in rapid succession. Fairly entering the hills at Jenny's Stockade, about 50 miles from Deadwood, the road passes through the most attractive portions, and at different points commands

views of Inyan Kara, Terry's, Harney's, and other noted peaks. The prettiest parks—features in which the Black Hills excel—the most extensive valleys, and the best forests all border the line. Beaver Creek Valley and its surroundings are especially prolific in beautiful landscapes, and present fitting welcome to the traveler from the south who enters the gold region by this route.

We entered Deadwood in September, when the narrow streets and muddy gulches were fairly bounding with the life and effort incident to preparations for the winter. Here was a mountain-crowded city of five or six thousand inhabitants, extending several miles up two narrow defiles, intruding upon other similar cities, and making as much fuss and bluster as eastern towns of a century's growth. There were log cabins and frame, in every conceivable attitude, tents on the hillsides, and solidly built business blocks along the narrow thoroughfares in the gulches, and the hills were fairly ringing with the clang of the hammer and saw on the dozens of new structures going up. Two large saw-mills were running night and day within the city limits, and the lumber was being put into buildings as fast as it left the saws. The improvements on the ground were estimated to have cost over one million dollars. The din of dozens of stamp mills reminded one of the old districts of Colorado, and the business done by over two hundred shops and mercantile houses was simply marvelous. Three daily newspapers, three banking houses, and some thirty hotels and eating houses were here crowded with business, where two years ago the amiable Sioux was reading his title clear and swearing he would have \$80,000,000 for the country or die in the last ditch. Two or three variety theatres and one furnishing the legitimate drama were crowded nightly. The veteran actor, Jack Langrishe, was running the place of amusement last referred to. When business grew dull he wielded a graceful editorial quill on the *Pioneer*, and when it grew duller, in winter, he went down into the gulch, boiled water to thaw out the frozen ground, and made good "pay" from his claim.

Readers can gain an idea of the wonderful business developed in so short a time here in the heart of the northern wilds from the statement that one bank was doing a business of from \$25,000 to \$75,000 per day in gold dust and exchange, and a hotel had fed as many as 1,000 people inside of twenty-four hours. Single firms were selling goods to the amount of seven to ten thousand dollars per month. These, of course, were Deadwood's flush days, but the business has really not lessened—it has only been divided among larger numbers of traders there and in the string of mining camps up and down the gulches.

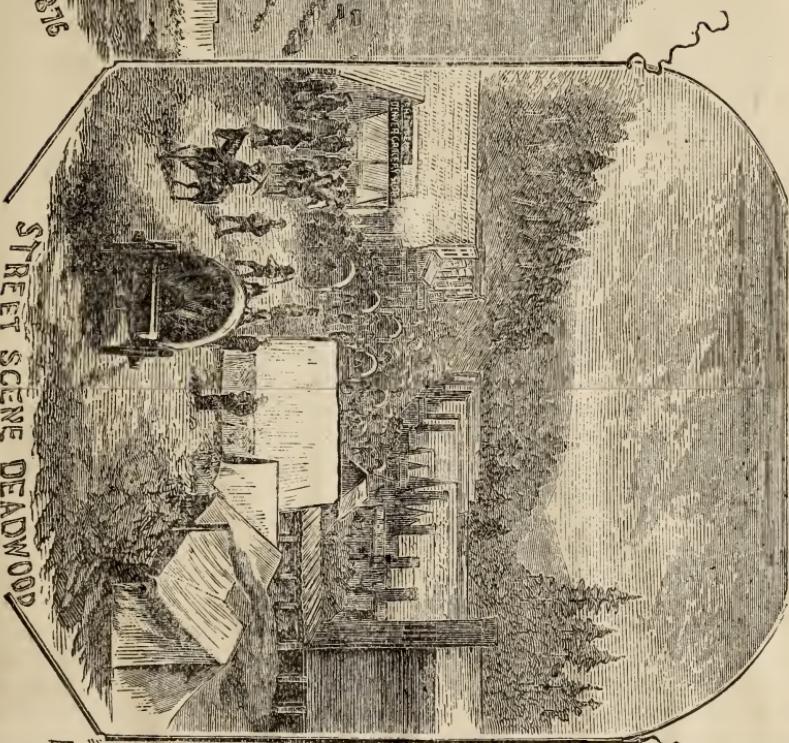
Adjoining Deadwood above are Gayville and Central City, where most of the richest quartz mines and many of the stamp mills are located. These towns swell the population some three or four thousand more, and are perfect lives of mining industry. The din of mills is unceasing and at places almost deafening, and hundreds of miners find employment in getting out the rich quartz on the hillsides or in delving for the glittering treasure in the creek beds below. Then, dependent upon this great mining interest, are blocks upon blocks of little shops and stores, or more pretentious business houses, with an allopathic sprinkling of saloons.

Speaking of saloons leads us to think of the continual surprise afforded us by the condition of society. Here, in the heart of an utter wilderness, but two years before the jealously guarded rendezvous of the most powerful and warlike tribes of Indians on the continent, were thousands of people,

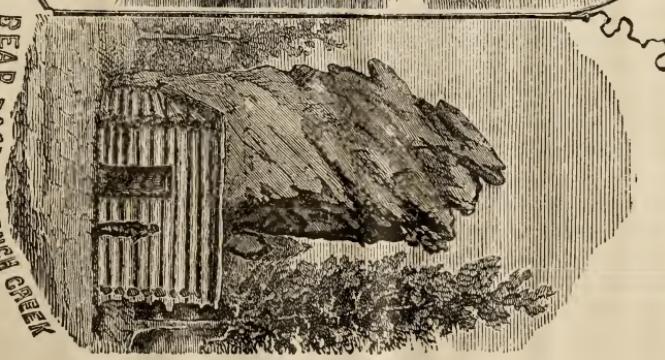
CUSTER CITY 1875



STREET SCENE DEADWOOD



BEAR ROCK FRENCH CREEK



who had rushed in from every quarter, under every circumstance and with habits as varied as the leaves on the trees. There was a degree of frenzy and abandon about their coming that presaged anything but order, and formed fruitful subject for sensational writers everywhere—the latter prophesying all sorts of evils, and, indeed, often manufacturing accounts of them from whole cloth. But a common interest banded these hardy and generous spirits together. In nearly all camps an organization was effected and stringent regulations adopted as soon as claims were staked off. If a black sheep *did* appear he was unceremoniously drummed out, and such examples did not often require repetition. The privileges arising through a code of miner's laws were considered sacred rights which were as universally respected as are local laws anywhere in our land. Thus disputes were as a rule amicably settled. We could walk into gulch claims that, for aught we knew, were as rich as California's best, and would find only the absent miner's pick and shovel in the prospect holes to hold the claims. Walking into a new camp here in the earliest days, upon the arrival of a mail, and inquiring whether there was anything for yourself, the general result would be: "Look in that cracker-box over there; it's got all the mail for the camp." Sure enough, every man of them would dive into that box, among hundreds of letters, sort them all over and honestly pick out his own. We have also always remarked upon another point, that we would sooner risk the chances of universal hearty welcome and unstinted hospitality in the rude huts of the miners than in a similar number of prosperous homes anywhere in the "States." From the man who was cleaning up \$500 in glittering dust per day to he who had as yet failed to make his simple "grub-stake" of flour and bacon, we met with the same unvarying kindness.

Deadwood and other towns already have good churches and schools, secret and other societies, and large circles of as intelligent and cultivated families as can be found anywhere. Why, all know that this little army of pioneers are already knocking loudly at the doors of the national capitol for new territorial government, that railroads are heading hither, that the telegraph and three or four lines of daily mail have enlivened the wilds for a year, and that a stream of the precious metals is pouring southward and eastward over the Union Pacific that even astonishes "the natives." But we found other things which we believe are not so familiar to the average reader. A chain of thriving settlements extends from the beautiful Belle Fourche river at the extreme north to the South Cheyenne, at the southern edge of the Hills. In a year these energetic and unfaltering pioneers have set hundreds of stamps to work crushing the royal metal from the mountains of rock—and all of this ponderous machinery they have hauled from two to three hundred miles by wagon. They have started flumes and hydraulic mining enterprises on a scale with some of the great developments of the Pacific coast and are just *commencing* to reap the benefits. In a year many of the choicest little valleys in the wide west have here been made to yield bountifully to the agriculturist, and many miles of unexcelled pasturage have been covered with flocks and herds. Thousands of acres of forests have been turned to rough and dressed lumber, by machinery also hauled several hundred miles, coal mines have been opened, smelting enterprises started, oil wells made to furnish lubricating oils for the mills, local railway and street railway companies incorporated, and hundreds of other enterprises clustered among the romantic valleys or in the pineries—all of these things have been accomplished in this new northland under the very guns of hostile raiders.

If all of these things have been brought about amid dangers seen and felt, and those more dreaded unseen, what may we not expect of the Eldorado as it bounds forward under the banner of peace? But let us get to "bottom facts" and figures, and see how the different industries are founded and developed.

Mining.—Everybody knows that the gold hunting furore was the great primary cause of the peopling of this rich district, which otherwise would have remained a howling wilderness for centuries, and that the same glittering incentive is resulting in the settlement of the vast Big Horn and Yellowstone regions. The mining interest, therefore, comes in for the largest share of attention, and our visit of a week or more was largely taken up in walks or rides among the gulches and quartz mills. The mineral belt proper of the Black Hills extends about sixty miles north and south and is from three to ten miles wide. Gold, silver, copper and iron have been found in different formations. Bituminous coal of an excellent quality is found on the Redwater, 25 miles from Deadwood, and such kindred resources as cinnabar, mica, gypsum and slate are found in various localities.

Gulch or placer mines are found on nearly all streams in the Hills. The richest of these have thus far been found in the vicinity of Deadwood and have been extensively worked for two seasons, yielding their millions in fine dust and nuggets. These extremely rich deposits were rather limited in extent and are rapidly becoming exhausted, but hundreds of acres of deep "gravel" and "hill" diggings are found at different points on this great mining belt which are scarcely touched. The latter have been well prospected, and those on Spring, French, Rapid and lower Whitewood creeks, especially, are known to contain millions of dollars' worth of the shining metal. The scarcity of water and other natural obstacles have rendered the investment of large amounts of capital absolutely necessary in these localities and have prevented a yield while the smaller and richer gulches were turning out their thousands with little outlay. Great ditch, flume and hydraulic enterprises have been inaugurated on most of the extensive placers, and the season of 1878 will see most of the large claims yielding abundantly. Gulch claims on Deadwood creek have yielded all the way from \$50,000 to \$200,000 each, and during the first season—1876—\$1,500,000 were taken out of the different gulches near Deadwood. Gold of every degree of fineness is encountered and sells at all prices from \$16 up to \$20 per ounce. We had the pleasure of handling it by the dozen pounds from certain gulches, where grains would be like powder, and from others where the nuggets ran as high as \$120 each in value. Of course gold dust is the currency at all points, everybody carrying a sack or bottle to hold it and every business house keeping gold scales to weigh out the change required. It is the opinion of many experts who have examined the gulches of the Black Hills that no region of similar extent in the Rocky Mountains contains so large an area of placer diggings. Nearly all unite in the belief that many of the deep claims will be yielding largely for years to come.

But quartz mining is destined to become the grand industry, and will alone, at no distant day, require the attention of thousands of busy workers. The quartz deposits are often simply quarries of prodigious extent, reversing the order of mining in older districts and rendering it a much less perplexing piece of business. Other deposits are pronounced true fissure veins by California and Colorado experts, and are found protruding at different angles, and in some en-

tirely new formations. The gold is generally found in decomposed quartzite and slate, and is easily separated by the simple stamp-mill process. So accessible and advantageous do most of the mines lie for working, that the ore is often mined at a cost of only \$1.50 per ton. The milling then costs an average of \$3.50 per ton. By this it will be seen that low-grade ores, carrying anywhere from \$8 to \$20 per ton, can be worked with profit. Ores of the same value in Colorado, Utah and elsewhere, can rarely be utilized, because they are of such refractory nature that expensive milling processes are necessary to separate the mineral from the rock. In such mines as the "Father De Smet," "Golden Terra," "Aurora," "Keats," and dozens of others in the Black Hills, there are thousands of tons of these easily-worked low-grade ores in sight, running from \$10 to \$50 per ton. When these mines were first discovered the "top rock" of some of them was pulverized in a common mortar, and yielded as high as \$2 per pound. Specimens of nearly pure gold are yet often extracted; but to the wonderful extent of deposits of good *average* pay-rock in many different mines the Black Hills will owe their future greatness.

Black Hills Bonanzas.—To give foundation for our belief that this is the richest *small* mining district on the face of the globe, we will briefly describe a few of the leading mines: The "Father De Smet," near Deadwood, shows a body of pay-ore 100 feet in *width*, across the face of the hill, and from 10 to 40 feet in height. Shafts and tunnels have been sunk into this at a dozen different points, all penetrating good pay-ore and failing to disclose an end to the immense deposit. The average yield of ore taken from the mine at many different points is \$18 per ton. Two 20-stamp mills are constantly at work on rock from this veritable mountain of gold-bearing mineral, and 200 stamps are soon to be employed in pounding out its millions of wealth. The mine, after enriching its original owners, was sold late in 1877 to California capitalists for \$400,000.

The "Homestake," at Lead City, three miles from Deadwood, is almost as extensive a deposit of free gold ore as the first-named. There are six excavations in a distance of 500 feet along the face of the lode, each down about 50 feet, and 60 feet in width—the top, bottom and sides all in a splendid body of ore. About 6,000 tons of ore, averaging \$16 per ton, have already been milled, and an 80-stamp mill was at last accounts *en route* from California to work exclusively on rock from this mine.

Near Central City is the "Reno" mine, also gold-bearing, extensive developments upon which demonstrate the fact that there is a compact body of exceedingly rich ore in sight, 350 by 700 feet in dimensions. Since the discovery some \$4,000 worth of work and material have been expended on the mine. All of this, as well as the "pocket money" of the owners, has been pounded out of the rock in a common hand mortar and washed out in an ordinary prospecting pan. A single ounce of ore, selected as a specimen, yielded \$3.50, and one pound and a half of the rock pounded to pieces with a sledge-hammer, gave the astonishing return of \$16. We have it from reliable authority that \$100,000 in gold was offered for this property and refused.

The "Roderick Dhu," near Deadwood, is pronounced a true fissure vein, and has a record worthy of note. It has been traced for a distance of 1,400 feet on the surface and, at several points where shafts have been sunk, shows a crevice 20 feet wide, which pays from the grass-roots down. All of the ore between these walls is fed to the mills without sorting. During the last five months of 1877,

4,000 tons of ore were taken out and crushed, yielding about \$16 per ton. A perfect leaf of gold, weighing eleven pennyweights, and taken from one of the shafts, is one of the specimens on exhibition at the mine.

The "Fairview" is another of the Black Hills quartz mines which tells its own story every day in the week. At the bottom of a 40-foot shaft the ore-body is 100 feet wide, and of universally good grade. Over 2,000 tons of free-gold ore, yielding from \$12 to \$20 per ton, have been worked at the company's mill.

There are dozens of others on a par with the above, but it is needless to mention them here. Forty different mines are crushing ore and at least one hundred have large piles of it on the "dump," waiting for milling facilities. Two of the principal mines alone keep ten mills busy constantly. On October 23, 1877, the Davenport ten-stamp mill cleaned up \$1,534 from 100 tons of "Homestake, No. 1" ore; October 31, Elliott & Parker's ten-stamp mill cleaned up 108 ounces of gold from eight tons of "Father De Smet" ore; \$12,000 gold was the result of a ten days' run from Pecacho ore under seventy stamps; ten days' run of ten stamps on "Fairview" ore returned \$7,000 in gold; December 10, Parker's twenty-stamp mill cleaned up \$6,000 in gold from a nine day's run on ore from the "Hidden Treasure." The plates only were cleaned, and the batteries always retain as much gold as is taken from the plates. These figures are merely given as average results of stamp mill work in the Hills and for the benefit of doubting readers. Dozens of others would show the same returns, and the end is not yet. The cry everywhere is "stamp mills!" There were 47 mills, with a total of 700 stamps, in operation in January, 1878, and 8 more, having 300 stamps, in course of construction. All this *in just one year from the time of entry of the first stamp mill.* It is safe to say that the summer of 1878 will see 1,200 stamps running day and night upon Black Hills gold ores—more than are in operation in Utah, Wyoming, Montana and Idaho combined; and, extravagant as it may seem, we firmly believe that this now comparatively unknown and unappreciated little treasure house will send more gold to the marts of trade during the year than all of the territories put together.

The Silver Mines.—The discovery of silver is of more recent date than that of gold, the summer of 1877 having almost passed before much attention was attracted to the silver-bearing ores of the Hills. Bear Butte, a dozen miles from Deadwood, is the principal silver-mining camp. It boasts a population of about 200 people, who all hang their faith upon the present and prospective value of the silver veins. The mineral belt is not very extensive, but enough mines have been discovered, which bid fair to rival the best of Colorado and Utah, to assure wealth for many. The ore is very easily worked, a large proportion needing only the old reliable stamp mill to make it give up its wealth. The "base" portion—that which cannot be reduced by stamps—is susceptible of reduction by the smelting process, with but trifling cost. A smelter and crusher is in successful operation, proving not only the richness of the ores, but also the ease with which the solid rock is made to yield its wealth of silver.

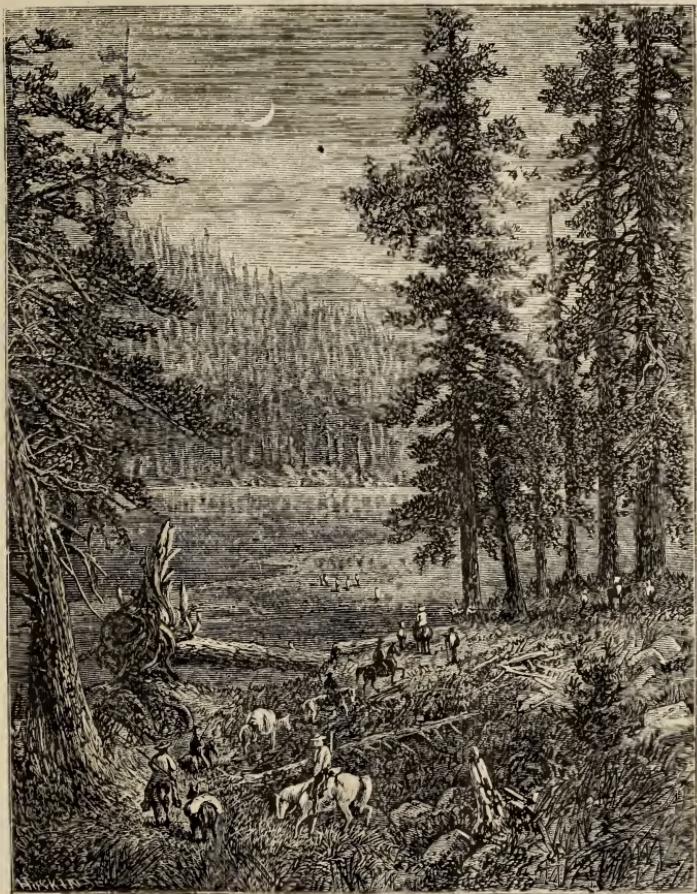
Among the principal silver mines is the "Florence," into which a tunnel 300 feet in length has been driven. The tunnel follows a rich ore body all the way. Large shipments of the mineral were made to the Omaha Smelting Works pre-

vious to the completion of the local works, and after paying the expenses of freighting nearly 300 miles by wagon and 500 by rail, realized handsome returns for the owner. The "Red Cloud," "Sitting Bull," "Merritt"—Nos. 1 and 2, and the "Silver Harvest" all show fine bodies of high grade ore, which impatiently await the magic touch of capital to transform them into silver bars. Ores from these mines assay all the way from \$50 to \$2,000 per ton. Bald Mountain, five miles above Deadwood, is another promising silver district, having very high grade ore in several mines. A town called Silver City has been laid out and is growing rapidly.

Location, Yield of Mines, Sales, Etc.—Up to January 10, 1878, there had been 7,200 gold and silver mines recorded in the different districts of the Black Hills. The yield of gold for the year 1877 was estimated by bankers and other competent authority at nearly \$4,000,000, four-fifths of which went south by express and private conveyance to the Union Pacific Railroad. Leading sales of mining property have been as follows: "Father De Smet," \$400,000; "Golden Terra," \$80,000; "Homestake, No. 1," \$70,000; "Homestake, No. 2," \$50,000; "Florence," \$51,000; "Old Abe," \$42,500. Hundreds of other cash transfers have been made at prices from \$1,000 up to \$25,000. The California mining capitalists, who have been so anxious to determine the existence or non-existence of true fissure veins in the Hills, have invested nearly a million of dollars in mines and mills around Deadwood, as a token of their present belief in the matter.

Petroleum.—As if nature could not too bountifully lavish her favors upon this until recently *terra incognita* of our dominions, aside from producing the valuable precious and base metals, we find incontrovertible evidence of the existence of an extensive petroleum deposit, the products of which, at no distant day, promises to form a large item in the catalogue of our industries. In the fall of 1877 a flowing spring of genuine petroleum was discovered eight miles to the south-east of Jenney's Stockade, on the Cheyenne and Black Hills stage road. The crude oil has been taken to Deadwood by the barrel and is now being used for lubricating purposes at the quartz mills there and elsewhere. Those of much experience in the oil fields of Pennsylvania pronounce this Black Hills production superior to the native oils of that state, it possessing a much heavier "body" and with less grit or impurities. The fields are some twenty-five miles wide with a length unknown. Up to February 1, 1878, nearly 100 locations of 160 acres each had been made, and improved machinery for boring was en route. Eastern lubricating oil, laid down at Deadwood, costs \$31 per barrel. As great quantities are used in the Hills the value of this discovery can in a measure be estimated.

"Ranching," Lumbering, Scenery, etc.—The numerous valleys, fertile soil and abundant rainfall in the Hills, together with the best market in the land, have combined to render "ranching," or farming, a very general avocation. The soil is generally a rich black loam, well nigh bottomless, as the valleys have long been filling up from the crumbling mould of the adjacent hills. Rain falls in light warm showers almost daily in summer—an unaccountable phenomena in that plain-bound oasis. In the lower valley, wheat, oats, barley and all hardy vegetables are grown without trouble, and in the higher parks, potatoes, cabbages, peas, etc., yield abundantly. The Spearfish, Belle Fourche and Redwater are the principal valleys, and already have much of their arable area



EMMA LAKE, ESTES PARK,
NEAR THE COLORADO CENTRAL RAILROAD.

taken up. One farmer in Spearfish valley (Judge J. S. Beck) cleared \$15,000 on potatoes and other vegetables from his 160-acre ranch in 1877. Potatoes sell at from 7 to 10 cents per pound at any of the mining camps; cabbage, 5 cents; turnips, 8; onions, 12; squash, 10; corn, 6; oats, 6. A luxuriant growth of grass spreads over the whole region, even upon the steep hill sides, and is utilized at many points by fine herds of cattle and sheep. The varieties of grass are almost endless; wild oats, wild rye, crowsfoot, grama and blue stem are among the varieties noticed. The areas of hay lands are not extensive, as a rule, but small patches are found in the parks and along the streams everywhere. Hay sells at from \$20 to \$30 per ton at Deadwood. Agricultural districts outside of the Hills are so far distant that the farmer near the mines will always secure extravagant prices for produce.

Wild fruits are exceptionally plentiful. We repeatedly feasted on plums, which were superior in flavor to any wild ones we have ever eaten elsewhere. Raspberries, gooseberries, currants, service berries, bear berries, strawberries and cherries, with other varieties that to us are nameless, are found in different localities. Hazel nuts and hops are also found, the hops making a growth scarcely equaled in the rich bottoms of the Mississippi and Missouri. The flora is none the less varied. Nearly all the wild flowers familiar in the east are reported here, and the visitor is greeted by some new and very beautiful species. Fish are plentiful in some of the streams, but better hunting grounds can be found nearer the railroad, because a horde of hunters have for two years been glutting the ravenous appetites of Black Hillers on the trophies of the chase.

The lumbering interest has assumed proportions only second in importance to that of mining. Pine, spruce, oak and birch are leading varieties among the hills, while cottonwood, box-elder and ash border most of the streams. Sixteen saw mills are at work in the immediate vicinity of Deadwood, and the forests are full of them in other sections. Besides the large quantities of lumber needed for building purposes it is consumed very rapidly in timbering mines. It sells at from \$28 to \$30 per M delivered.

Stage roads track the Hills in every direction and from these running south to Sidney and Cheyenne, especially, views rivaling the beauties of the Catskills can often be obtained. It should be remembered that the scenery here more nearly resembles that of the eastern mountains than anything in the west. The soft outlines, the luxuriant vegetation, and the rippling brooks are leading constituents, rather than cold, gray cliffs, barren walls and rushing torrents so common in the Rockies. Sulphur and other medicinal waters are found in the southern part of the Hills, and a cave, well worthy the visit of every traveler, is one of the attractions near Crook City in the northern portion. The admirable views of Sunshine Falls and Sentinel Rock on another page, will give readers an idea of the hundreds of other similar gems of Black Hills scenery.

Mining Camps, Population, Cost of Living and Routes.—Prominent camps outside of Deadwood are as follows: Gayville, South Bend, Central City, Golden Gate, Anchor City, Oro and Lead City, all within a circuit of four miles from Deadwood and centers of rich gulch and quartz mines. The total population of these is about 5,000. Crook City, located in a beautiful park on Whitewood creek, 10 miles east of Deadwood, contains about 500 inhabitants. It was named in honor of General Crook,—whose successful campaigns against the hostile Sioux and Cheyennes have enabled the settlers to hold their homes—and is surrounded

by rich mines as well as adjacent to fine agricultural valleys. Rapid City is a thriving town of about 700 inhabitants, located 42 miles south of Deadwood, on the Sidney and Black Hills stage road. Large quartz veins, carrying both gold and silver, have been discovered in the vicinity. Deposits of iron ore and gypsum are also quite extensive here. Rapid Creek, on the banks of which the town is located, furnishes an admirable and never-failing water power by its rapid fall and large volume. It courses a valley of surpassing beauty and marked fertility, some 40 miles in length by from one to two miles in width. On the same stage line and 52 miles south of Deadwood is Custer, the pioneer settlement in the Black Hills, and in our estimation by far the most beautifully located. French Creek here waters a broad, level valley, which is bordered by low, grassy hills, dotted with clusters of pines. Some of the highest peaks in the hills limit vision in the distance and form background for one of the loveliest landscapes in the country. Good quartz mines have been discovered in the vicinity and the deep gulch diggings of French Creek were the first prime incentives to the rush of gold seekers. Population about 500. Galena, 12 miles from Deadwood, is a promising camp in the Bear Butte silver mining district, containing some 400 people. Good wagon roads and daily stage lines connect nearly all of these points with Cheyenne and Sidney.

At the convention called favoring the organization of a new territory in the fall of 1877, 19 towns and mining camps were represented. The present total population of the Black Hills region is estimated at from 12,000 to 18,000. More people have been in the Hills, but hundreds of the "driftwood" have folded their tents and sought other fields, leaving the real bone and sinew to conquer the wilds. We believe that few fields are presented which offer such inducements for the investment of small or large capital, but he who possesses neither dollars nor energy can exist to a better advantage east of the Missouri. There are mines, pastures and farmlands here which will enrich twice the present population, in spite of all reports of departed grumbler.

Cost of living at principal hotels in the Hills is from \$12 to \$20 per week; at boarding houses, \$8 to \$10. Miners often live in cabins and "batch it" at a cost of from \$3 to \$5 each per week. Prices of provisions, aside from ranch produce already noted, are about as follows: Flour, \$8.50 to \$10 per cwt; bacon, 18 to 25 cents per pound; butter, 35 to 45 cents; dried fruits, 18 to 25; coffee, 35 to 45; sugars, 18 to 20; eggs, 45 to 75 cents per dozen. Cottages of only two and three rooms rent for \$25 to \$40 per month; business houses, 20 x 40 feet, rent readily at \$150 per month. Good miners nearly always find employment at from \$4 to \$5 per day. Novices are numerous now and don't receive more than half as much as the skilled workmen.

All agree that the old established routes to the Union Pacific Railway, via Cheyenne or Sidney, offer the only direct and safe means of exit from the Black Hills. They are the only natural ones and of course the tide of travel and shipments of treasure and produce must always flow over them. Concerning this general opinion of residents the *Black Hills Mining Reporter* says: "The comfort, speed and popularity of Union Pacific Railway trains is too well established to need a word of commendation. From Sidney or Cheyenne passengers take the coaches of the Cheyenne and Black Hills Stage company; well superintended, the roads well stocked with four and six-horse Concord coaches and with every comfort of stage travel, and over a splendid road, reach Deadwood in 50 hours

from the time of starting, the distance being 260 miles. The fare (through ticket) from Chicago to Deadwood is \$49.25. This is the only line upon which military posts are established, and over which a telegraph wire runs. This being the acknowledged best route, the traveling public should choose no other, for the following reasons: The removal of the Indians by the government from the Red Cloud Agency to the Missouri river, renders the southern route from the U. P. R. R. entirely free from marauding bands; while the northern routes via Pierre and Bismarck will be constantly crossed by these turbulent spirits, going to and from Sitting Bull's camp and the excellent hunting grounds of the Yellowstone and Powder river countries. The recent raids made on the Bismarck coaches fully authenticate this. Therefore, for safety, speed and comfort, we would give the Sidney and Cheyenne routes our unqualified and hearty recommendation. Having personally obtained a thorough knowledge of all routes we give this entirely free from recompense from the railroads or the stage lines, and with certainly no prejudice, but with a conscious sense of doing our whole duty to the vast immigration that will necessarily visit this new Eldorado."

It should be remembered that Custer, Hayward, Rapid City, and other points at the eastern edge of the Hills, are on the Sidney route, while all mining camps in the center or on the western side of the Hills, are either on the line of the Cheyenne route or are easily accessible from it. (See map in this pamphlet.) Custer can also be reached from the Cheyenne route; a daily stage line branching off from Jenny's Stockade for that point. Fares from Deadwood to Crook City, 10 miles, \$2; to Rapid City, 42 miles, \$6; Cheyenne or Sidney, \$30. Fares from Deadwood to all points in the Hills will average fifteen cents per mile.

THE BIG HORN REGION.

Lying almost wholly in northwestern Wyoming, and covering an area of some 15,000 square miles, is the great Big Horn Region, which is so rapidly coming to the front as a rendezvous for overflowing civilization. Rising near the head of Powder river the Big Horn Range trends off grandly to the northwest for a distance of 200 miles, and then, turning almost directly west, soon loses itself in the different ranges bordering the Yellowstone National Park. Many of the mountain peaks rise up 12,000 feet above the sea, while the average altitude of the valleys at the base of the range is 4,500 feet. A scene which we can never forget is that which we enjoyed from the Cheyenne route as we caught our first glimpse of this great water-shed. We can do no better than to quote what we jotted down then: "Nearly the whole of the resplendent range, stretching off along the northwestern horizon 150 miles, is grasped by the eager vision — 'a cloud-land mirage!' we first exclaim, its lofty peaks appearing white, fleecy and ethereal enough to belong to cloud-land, and yet too surpassingly grand to be spared by even a beautiful earth. In most harmonious contrast to the great banks of glittering snow—banks of burnished silver, they looked to us—are the long, purple-tinged pedestals upon which they rest. These are the unusually rugged foot-hills, and they receive their rich coloring from dense forests of pine and spruce, which cover them from base to summit. From near the center rise Cloud and Hayes peaks, the proudest landmarks of all the northern country, while at frequent intervals on either side other snow-capped sentinels are clearly outlined against the sky. Even from this distant

view the grand cañons of the Tongue river tributaries are defined—sombre and threatening gashes, and sometimes almost cavernous in their rocky mould."

It was the writer's good fortune to traverse this grand wilderness almost from end to end, and to several times cross the Big Horn range in the vicinity of Cloud Peak. From the summit, at an altitude of some 12,000 feet, a view which can hardly be equaled in the mountain ranges of America was obtained. Eastward it swept from the Powder river region to that of the Yellowstone and a radius of 250 miles was but a comprehensive panorama for the naked eye. The Tongue, Powder, Rosebud and other rivers could be traced almost from the feet of the enraptured visitor, out northward among their lesser mountains and flanking plains, until lost in the picturesque brakes of the Yellowstone, 150 miles away. Westward for over 100 miles stretched the valley of the Big Horn, the crystal sheen of that river itself often emerging from graceful groves of richest green. Still beyond in that direction were the Wind River mountains, with their thousand rugged canyons and unbroken covering of snow. Yet beyond—over 200 miles distant—was the Shoshone range, bordering the National Park, its giant peaks rising up like spectres in the dim background saying, "thus far and no farther shalt thy vision penetrate." Then the grand mass of granite upon which we stood, so long the fascinating *terra incognita* of the northwest, and to-day the richest field of promise in all our broad land, afforded a study never to be forgotten. Mountains upon mountains rolled up toward our common footstool like the exaggerated waves of an ocean—with "white caps" of snow for "white caps" of foam—these, when analyzed, becoming live forests of refreshing green or fire-licked forests of sombre brown and gray, sheltering hundreds of mountain torrents, leaping waterfalls, pine-embowered parks and rock-girt lakes. It was simply a survey of America's best hunting-grounds, her deepest and grandest solitudes, and her land richest in native tradition, adventure and "extravagant possibilities." Much abler pens filled columns with glowing descriptions of those "dizzy altitudes, blackened cliffs and awful gorges," and yet the half has not been told.

The region has always been coveted by different savage nations, and its lovely valleys have been the scene of perpetual strife. The Crows and Shoshones have for years sacrificed their best blood in vain endeavors to rid it of their deadly enemies, the Sioux. The tribes unite in calling the Big Horn and Tongue river regions the most beautiful of America—the natural home of all noble game and of the most delicate fish. The Crows have a beautiful saying, "The Great Spirit only looks at other countries in summer, but here he dwells all the year." Then another tribe have a tradition which tells them that this country is nearest the "happy hunting ground," and that the warrior who falls here is particularly favored, because he makes only one short step from the old scenes to the enchanting new.

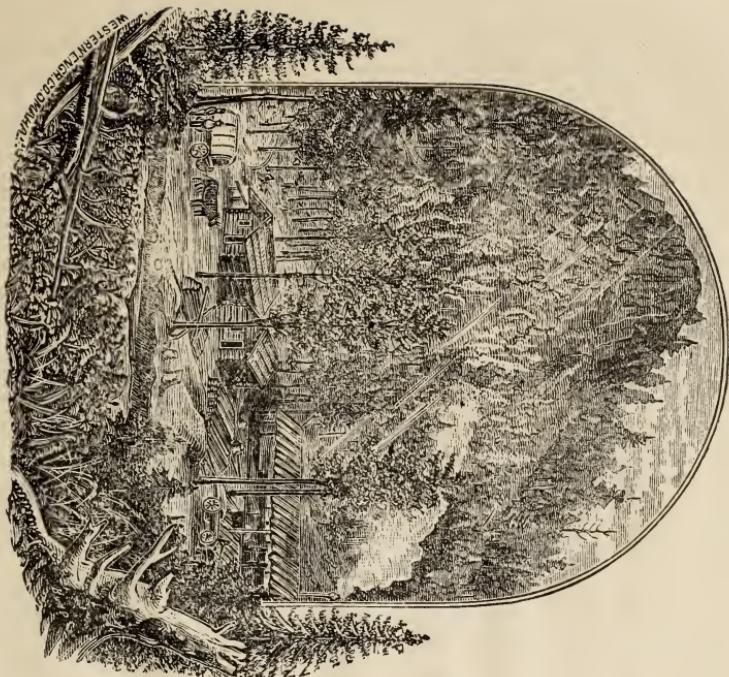
Gold in the Big Horn Mountains.—"Colors" of gold have been found in nearly all the streams debouching from the Big Horn Mountains, but as yet the *source* of all these little grains is a profound mystery. It is known that mining was carried on there many years ago by the Spanish explorers from the south and that many trappers and scouts, during hasty visits in our own time, have found deposits of considerable richness. Numerous small and a few large parties of miners have entered the region and found splendid prospects of both gulch and quartz gold, but always encountered supernumerary savages as well.

One year ago the region was considered practically impenetrable by any force short of a regiment of well disciplined troops; and the operations of the military have always been so thoroughly confined to taking care of "Mr. Lo" (sometimes to taking care of themselves) that no real opportunity has been offered for a thorough search of the gulches. In January, 1878, considerable excitement was created by the discoveries of rich quartz mines on Crazy Woman's Fork of Powder river. We have seen immense deposits of decomposed gold-bearing quartz during our perambulations with the military in the mountains near Cloud Peak. The veins were clearly defined ledges of from five to twenty feet in width, protruding from the vast walls of granite so plainly that they could be traced for miles. We still believe that quartz and placer mines of an extent and richness second to none in the western mountains will be found within the grand confines of this section.

Valleys, Soil, Climate, Game and Fish.—The principal rivers are the Powder, Tongue, Wind and Big Horn, with hundreds of splendid tributaries which well deserve the title of "rivers." For nearly two hundred miles along the northeastern base of the Big Horn mountains, the clearest and most beautiful of streams sweep violently down through their picturesque gorges, and course northward a hundred and fifty miles to the common reservoir—the great Yellowstone. These often occur at intervals of less than five miles, and it is seldom that more than a dozen miles of unequaled uplands separate them, or that crystal springs do not send pretty laterals bounding over gravel beds to the more pretentious creeks or rivers. The valleys are from one to ten miles wide, and the soil is usually a rich, black, porous loam. Every element of fertility seems to be present, and every species of vegetation attests its wonderful nourishment by a most luxuriant growth. Irrigation will be a necessary auxiliary to cultivation, but with these numberless dashing streams, bearing with their beauty the impalpable fertilizers of crumbling mountains, it will be a pleasure rather than a task. Vegetable life is much the same as in Rocky Mountain regions four hundred miles farther south, except that the varieties here often have a much stronger growth. Wild rye is found so tall that a cavalryman could nearly, if not entirely, hide himself in it, while mounted. Wild oats, native blue-grass, and all the varieties of plains grasses, present this same strong testimony of fertility of soil and congenial climate. Natural pasture lands could not be finer than these. The average altitude of the valleys being less than 4,000 feet, the region of summer frosts is not reached. Wild fruits and flowers are as plentiful as in the Black Hills.

Many of the valleys contain enough cottonwood, ash, box-elder and other timber to supply logs for fuel or building, for years to come. The great mountains overlooking on one side, and many of the bluffs below, are covered with forests of pine, hemlock, spruce and cedar, furnishing inexhaustible quantities of building material. We opine that about every other settler will own a coal mine, as the "black diamonds" crop out almost everywhere, and are known to furnish an excellent quality of fuel, as they have often been tested in the camp forges of the military.

We found some of our choicest hunting grounds in this region, and, as already intimated, it has always been considered a very paradise for hunters, white or red. It was the chosen resort of hundreds of Northwestern Fur Company employes half a century ago. Many were the batteaux, or Mackinaw



SENTINEL ROCK, BLACK HILLS

REACHED BY CHEYENNE AND BLACK HILLS STAGE LINE, VIA UNION PACIFIC RAILWAY.



SUNSHINE FALLS BLACK HILLS.

boats, which floated down the great rivers from these wilds, freighted with the richest offerings of field, forest and stream. A pretty good joke—and one with solid foundation in fact—is told at the expense of one of the prominent officers who led a large expedition through this region about ten years ago: The column was near the forks of the Piney, and scouts came back with the report that a large body of Indians was moving up the valley, with evident intent to attack. The general hastened forward, took in the terrors of the situation with his field glass, and soon had his forces posted in first rate style for defense. The attacking column advanced in very close order, and kicked up so much dust that little could be seen of it. But it surged on resistlessly. Men were holding their breath in the tremor of suspense, and just as they expected the order to fire a sharp breeze wafted away the dust, disclosing a herd of a thousand elk—*ten thousand*, our informant says, but we should prefer not to spoil a good story.

Elk, buffalo, mountain sheep, black and white-tailed deer, antelope, grizzly and other varieties of bear, with all kinds of small game, have always found in this region their most coveted surroundings. The streams are yet full of beaver and other fur-bearing animals, and the country is literally alive with several species of the wolf. The Yellowstone, Big Horn and Tongue rivers and their hundreds of tributaries, are plentifully supplied with trout, pike, shiners, catfish, suckers, and other varieties of fish.

Two years ago only the ruins of long since abandoned forts suggested thoughts of past or present civilization. Now three of the largest military posts in America—one near the spot where the gallant Custer fell—are located at convenient intervals. In January, 1878, great excitement was caused by the discovery of rich quartz mines on the head waters of a fork of Powder river, where just one year before, General Crook's forces fought one of the hardest battles of the Sioux war. The telegraph is now stretched from Fort Fetterman, on the Platte, to Camp McKinney on Powder river—where the Sioux, ten years ago, burnt and plundered old Fort Reno—and the whole region is thus placed on gossiping terms with the outside world. The spot now occupied by Murphy's Ranch, on the Clear Fork of Powder river, was for many years one of the Indians' choicest camping places, and the broad and beautiful valley is there fairly strewn with tepee poles and other remnants of the aborigines' favorite habitation. Herds have been pushed northward far beyond the Platte, up along the Cheyenne and Big Horn road, ranches being scattered along at all the crossings of the streams from Cheyenne through to the base of the Big Horn mountains, a distance of three hundred miles.

The Cheyenne route from the southeast is the only one which yet furnishes a complete list of camping places, and which has been measured by odometer. It is also the only one yet traversed by the writer, and therefore the only one of which he can speak understandingly. It is the old overland Montana route, possesses a splendid road-bed and easy grades from beginning to end, and lies over the country which would naturally be traversed by the proposed Cheyenne and Montana railway. Following the regular Black Hills road to Hunton's ranch, on the Chugwater, the emigrant then branches off to the northwest upon the old and constantly traveled government highway to Fort Fetterman. Such clear, strong streams as the Laramie river, Horseshoe, Big Cottonwood, Elkhorn and La Bonte creeks are crossed *en route*, affording fine camping places with plenty of wood and pure mountain water. From Fort Fetterman northwest, a

distance of ninety miles, over choice grazing lands, the traveler will find as fine a road as crosses any portion of our prairies. This stage of the journey completed, Camp McKinney, on Powder river, is reached. Forty miles distant the grand Big Horn range rises in plain view, and the journey thither is finished easily in a day's ride. At the Powder river crossing a good stock of provisions is always on hand, and that point will be found a most convenient outpost. A weekly mail now goes to that point via Cheyenne. A fair wagon road leads from Deadwood to Camp McKinney—distance, 200 miles. Following is an accurate table of distances over the Cheyenne route:

	Miles.
Cheyenne to Lodge Pole Creek.....	16
Lodge Pole Creek to Bear Springs.....	20
Bear Springs to Chugwater.....	14
Chugwater to Hunton's Ranch.....	15
Hunton's Ranch to South Laramie River.....	22
Laramie River to Cottonwood Ranch.....	20
Cottonwood Ranch to Elkhorn.....	25
Elkhorn to Wagon Hound.....	15
Wagon Hound to Fort Fetterman.....	16
Fort Fetterman to Sage Creek*.....	14
Sage Creek to South Fork Cheyenne River.....	18
South Fork Cheyenne to Antelope Springs†.....	21
Antelope Springs to Dry Fork of Powder River.....	23
Dry Fork Powder to Camp McKinney.....	14
Camp McKinney to Crazy Woman's Fork.....	27
Crazy Woman's Fork to Clear Fork.....	20
Clear Fork to base of Cloud Peak.....	25
 Total.....	 325

The distance from Cheyenne to Virginia City, Montana, by this route, is 690 miles. Wyoming legislators have already memorialized Congress for a land grant in aid of a railway leading thither. As camps, trading posts, mail routes, and the telegraph are established to the southern boundary of the Big Horn region, and prospectors have already rushed in by the hundred, the daily six-horse coach over that line is a feature of the not very distant future. The Big Horn region, so vast, so rich in agricultural and pastoral resources, and undoubtedly possessing great mineral wealth, will then soon be pouring its cattle and sheep, its grain and wool, and its riches of the sluice-box and quartz vein out over the common trans-continental highway. Verily, whither *is* the course of empire?

* No wood

† Water poor and scarce.

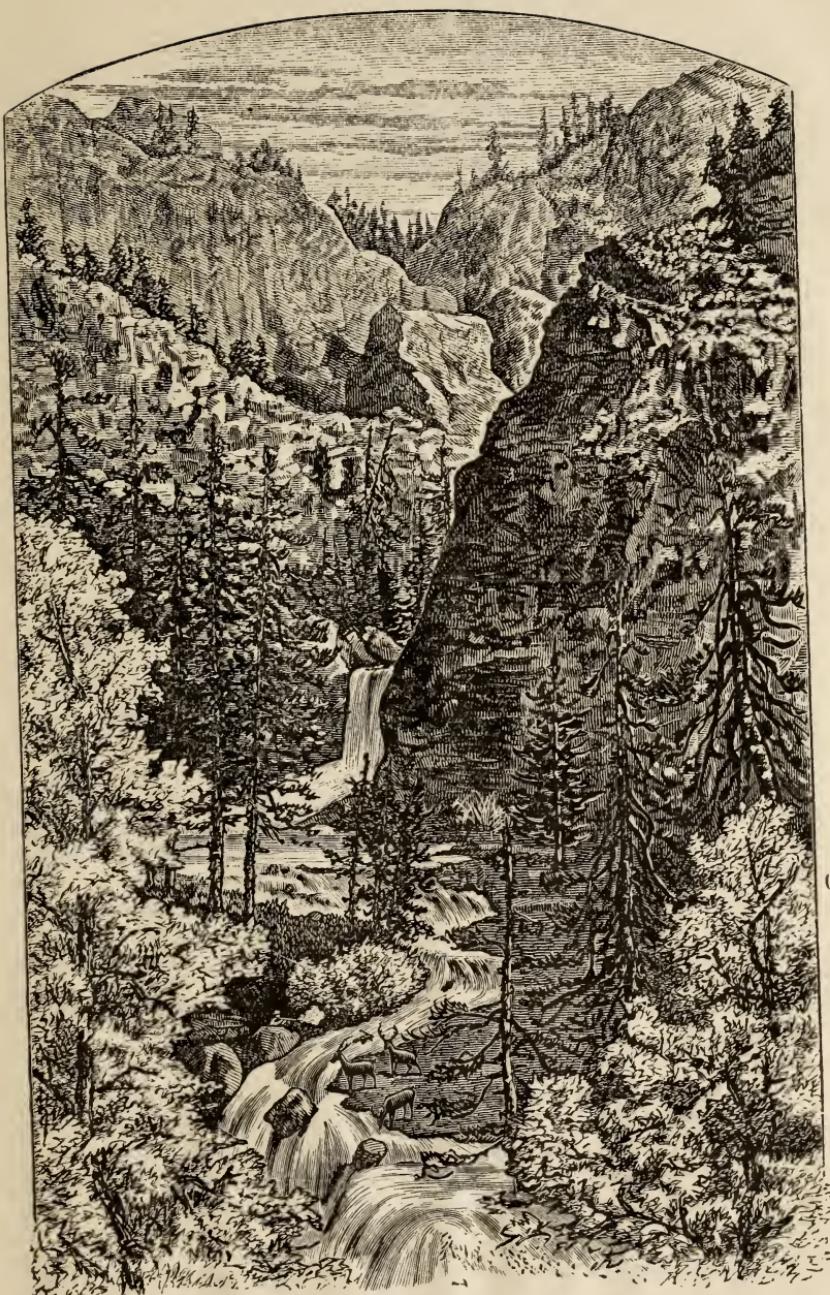
CHAPTER III.

COLORADO—WEALTH AND ATTRACTIONS OF OUR YOUNGEST STATE.

Now, as the tourist glides southward over that prodigy of all Colorado rail-ways—the Colorado Central—and crosses into the realms of the bright Centen-nial State, he may wish to glance at Colorado, past and present. Only nineteen years ago the germ of this noble commonwealth was planted along the golden gulches he is so rapidly nearing. In these nineteen years Colorado's mountains have yielded \$80,000,000 in gold and silver. It is estimated that her pastures, farms and dairies have furnished her markets with \$50,000,000 worth of products, and her taxable wealth has increased from a few thousands in 1859 to over \$40,000,000 in 1877. From the small gatherings of frenzied miners along her mineral veins in palmy '59, she has grown to the enviable strength of 150,000 busy, conquering natures, these inhabitants fairly charged with a nervous, uncompromising energy, born of sunny skies and purest ether. Over 60,000 mines have already been discovered and recorded, and the din of the quartz mill, the drill and the blast echo night and day from a thousand mountain sides and mountain depths. The yield of gold, silver, copper and coal for 1877, according to the best authority, was \$9,000,000. The shipments of live stock amounted to 75,000 head; of wool, 5,000,000 pounds; yield of wheat, 1,750,000 bushels; value of manufactured articles, \$5,838,209.60; number of live stock in the state, 1,500,000 head. The following table represents the value of all productions for the year 1877:

Bullion.....	\$7,913,411 00
Cattle.....	2,233,200 00
Wheat.....	1,887,500 00
Other agricultural products.....	775,000 00
Hay.....	1,250,000 00
Coal.....	1,065,385 00
Wool, hides, etc.....	1,340,000 00
Manufactured products.....	5,838,209 60
Total.....	\$22,252,705 60

Seven years ago Colorado was without railway communication, and generally styled "out of the world." To-day her energetic citizens point with pride to eight different railroads tracking her broad prairies and plunging even to the hearts and heights of her mountains. The total number of miles of these lines operated is 1,133. Half of these have been constructed while the railway interest has been paralyzed in almost all other sections, and Colorado's showing is due almost wholly to the invincible pluck of her citizens, the wondrous wealth of her mines and the riches in her grasses and farm lands. Seven of these lines, aggregating nearly 1,000 miles, were built while she was yet a territory. The daily mail, telegraph and express radiate from her capital city to every nook and corner. From the garden spot of the state you are just entering at the north to the furthermost mining camp south and west you will find these pulsating and



BOULDER FALLS, BOULDER CANYON, COL.

life-giving arteries contributing their share toward founding an empire of wealth.

Commercial and educational interests have in these few years of Colorado's history augmented in almost incredible speed. In the past seven years she has trebled in population and wealth. The state already boasts thirty-five banking institutions, with a capital of over \$2,000,000. Wholesale houses carrying large stocks and representing every line are not only found in Denver, but at several other valley and mountain cities. These do a business of from \$500,000 to \$1,500,000 each, and come into close competition with heavy eastern dealers. Internal revenue collections in 1877 were \$80,000, or more than those from Arizona, Dakota, Idaho, Montana and Wyoming combined. As an evidence of the educational and literary advantages enjoyed here in the heart of the continent it may be mentioned that the state contains 275 free schools, a magnificent State University and half a dozen well-conducted sectarian and private seminaries. No people read more, these not only supporting a dozen good public libraries, but also sustaining forty-five well-edited newspapers, one-sixth of the number being published daily.

In points of climate or scenery Colorado is rivaled by no other state or territory in the land. Her pleasure and health resorts, from one to two miles above sea level, afford an atmosphere which is an elixir in itself. Into her princely area of 105,000 square miles are crowded every variety of valley and mountain temperature. Sunshine, dry streets and a maximum of warm days may be enjoyed in her sheltered valleys in winter, or flowers and snow banks and a frosty atmosphere may garnish the mountain camp-ground in midsummer. The range of mineral waters for either bathing or drinking purposes is probably greater than in any region of similar extent on the globe. Hot sulphur and soda for bathing, cold soda, seltzer, iron, chalybeate and sulphur for drinking, are found at altitudes ranging from 5,000 to 9,000 feet above the sea, and in several cases are within sight of the railway. The scenic attractions are none the less varied, and can nearly always be viewed from the luxuriant palace car, the comfortable day coach, or by unsurpassed mountain carriage roads. The invalid, whose mind *must* feed on something, can combine business and profit with the great aim of his sojourn, for adjacent to the most charming health resorts are Colorado's grandest mining, smelting and railroad enterprises. These offer an ever-fruitful study, and always present a field for business venture. As a prominent writer expresses it: "Life everywhere is safe; travel is easy; the mountains are full of neat little homes." No region of such multiplied attractions could be more accessible.

This is but a hasty outline, an imperfect peep through the portals of one of these marvelously rich and thriving regions so thoroughly permeated and drained by the Union Pacific and its busy feeders. While following the bands of steel through the valleys and into the mountains we tried to become acquainted with the pleasant topic in all its details, and in pages following will give our readers the result.

THE COLORADO CENTRAL BRANCH OF THE UNION PACIFIC RAILWAY.

One of the most important of all home enterprises of the state is this giant young railway. The completion of its main line from Denver to the Union Pa-

cific, at Cheyenne, marks a grand era in the railway history of Colorado, and supplies us with striking illustrations of healthy "outwest" enterprise. Begun seven years ago, at Golden City, with prospects anything but bright, it has not only been the pioneer for the farmer in the valleys, but has carried with it the means of development for the miner within his walls of granite and at his sluice-box as well. Under the auspices and continued guidance of the present president of the company, Hon. W. A. H. Loveland, it has been pushed to completion with an energy worthy of note. The first section of sixteen miles was commenced and completed in the summer months of 1870. This was the standard broad-gauge, and connected Denver with Golden, at the foot-hills. During the summer and fall of 1872 the narrow-gauge line was pushed through the wonderful Clear Creek Cañon, from Golden to the heart of the great gold region at Black Hawk, a distance of twenty-two miles. Early in 1873 four miles of narrow-gauge were completed up South Clear Creek, opening by an easy route the whole of Clear Creek county and the rich silver mines of Georgetown. A month later thirty-eight miles of the main broad-gauge line, leading from Golden north through Colorado's finest farm lands to Longmont, were in operation. During the months of May, June and July, 1877, the mountain line was extended along South Clear Creek to Georgetown—fourteen miles—tapping the very silver veins, and carrying needed supplies from the fertile valleys 5,000 feet below to the miner's door. While this work was going on in the depths of the mountains, the crowning achievement was inaugurated on the through line between Longmont and Cheyenne. Including the switches, eighty miles of track were here laid in sixty-seven days, and by the close of October, 1877, Colorado enjoyed her first independent through line, from the mountain cities to Omaha and the Missouri river.

The narrow-gauge extension from Black Hawk to Central, four miles, one of the finest pieces of railway engineering ever attempted, is also about completed, and will give this corporation 185 miles of splendidly built and equipped roadway. Extensions also in progress from Georgetown to the South Park silver mines, 73 miles; from Central to Caribou, 20 miles, and from Golden to Acequia, on the Denver & Rio Grande Railway, 16 miles, will assist in a large degree in making this railway the great drain and feeder of all the prominent mining and agricultural regions of Colorado.

The Only Route.—The Colorado Central Railway is the only route traversing the rich and populous agricultural districts of the state. It is the only line penetrating the immense gold and silver belt, and the only one tapping alike the great valley coal measures and mountain forests. By it the tourist is furnished the grandest mountain views at every mile of progress and is finally set down in the midst of the most rugged and beautiful cañon scenery, or within stone's throw of Colorado's most famous medicinal springs. Of Colorado's thirty counties the different branches of this railway penetrate six. These six counties, according to official reports, contain 75,000 people, or one-half of the entire population of the State. Their taxable wealth is \$20,500,000—more than half the total valuation of the State—and in gold and silver, wheat and other products, these six counties contributed in 1877 \$14,000,000 out of the total of \$22,000,000 produced by the entire state. The wheat yield of four of these banner counties—Larimer, Boulder, Jefferson and Arapahoe—was 1,150,000 bushels, three-fourths of the production of the state, while the three counties of Boulder, Clear

Creek and Gilpin—tributary alone to the Colorado Central Railway—poured out an offering of \$5,200,000 in gold, silver and coal, and thus supplied two-thirds of Colorado's mineral yield.

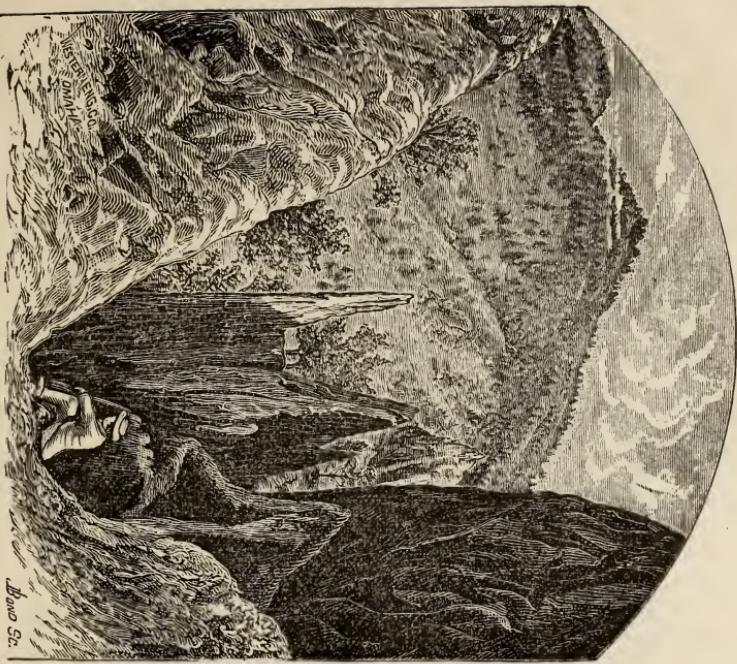
In brief, then, the Colorado Central Railway is prosperous, alone and unrivaled in its sphere because, first, it alone penetrates the most thickly populated and the most lavishly productive sections of a rich state; second, because it follows the greatest of all belts—the wheat belts and the belts of gold and silver; third, it is the great and only factor of exchange between the army of treasure-finders in the metal-ribbed mountains and the thousands of thrifty wheat and cattle-raisers in the fertile valleys; fourth, it bears the pleasure-seeker to natural attractions rivaling the Yosemite, and the invalid to the country's most invigorating atmosphere and most delicious and health-giving waters.

Distances.—Stations, distances and local fares southward from Cheyenne are as follows:

Cheyenne to	Miles.	Fare.
Colorado Junction.....	5	\$0 65
Lone Tree.....	15	0 75
Round Butte.....	23	1 25
Bristol.....	32	1 75
Fort Collins.....	50	2 50
Loveland.....	61	3 10
Berthoud.....	69	3 25
Highland.....	73	3 25
Longmont.....	78	3 50
Ni Wot.....	84	3 60
Boulder.....	91	3 75
Lakeside.....	94	4 00
Davidson.....	98	4 15
Coal Creek.....	100	4 25
Church's.....	109	4 75
Ralston.....	115	5 00
Golden.....	117	5 25
Ahlstrom's.....	123	5 45
Arvada.....	124	5 50
Denver.....	132	6 00

At Colorado Junction, five miles west of Cheyenne, the road turns off squarely to the southward and maintains this general direction for over 100 miles. The ever-majestic mountains, from five to ten miles distant on the west, furnish an almost unending panorama in that direction, while on the east the great sheep and cattle ranges stretch to the horizon. Soon after leaving Colorado Junction we crossed some of Colorado's most famous antelope country, and by keeping a sharp lookout could see the contented animals browsing among the rounded hills at almost any time. Large herds of sheep and cattle also here find a favorite range. In crossing the ridges which border Lone Tree creek, some pretty heavy grades are made, but just as we caught a glimpse of the valley of the same name, the order was reversed. The descent is easily accomplished, however, by the skill of these latter-day railway builders. The road follows up the right side of the valley for a short distance, then, by a graceful curve, crosses the broad meadows and descends on the opposite side.

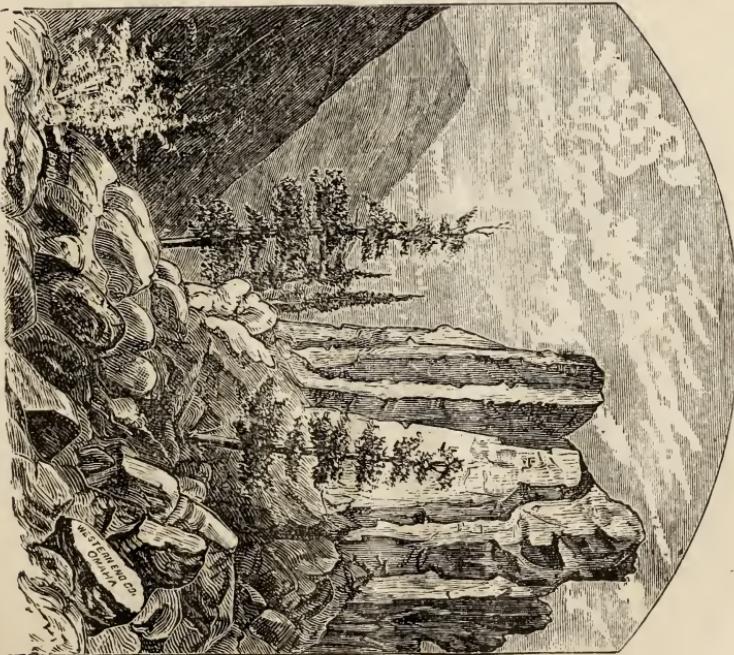
Lone Tree Valley boasts several of the best sheep, cattle and horse ranches to be found along the line. Several prominent business men of Cheyenne are engaged in this interest here. Cattle and horses are never fed, while sheep re-



RED ROCK SPIRES, NEAR BOULDER.

CASTLE ROCK, BOULDER CANON.

REACHED VIA COLORADO CENTRAL BRANCH OF THE UNION PACIFIC RAILWAY.



quire hay only at rare intervals in the winter. The neighboring bluffs not only furnish the necessary shelter for stock in winter, but are also the best source for food, as their abrupt sides are seldom covered with snow. Antelope are abundant among the surrounding hills, and wild ducks are always noticeable in the creek in spring and autumn. A few days' hunt could be pleasantly made from any of these ranches at less expense for board than one would incur in western cities.

Passing down the valley a few miles, the road again strikes into the grass-covered uplands so common between water courses along the foot-hills. The small way-stations, Round Butte and Bristol, are quickly passed, the former being named after a prominent land mark in its vicinity on the left.

Duck Hunting.—Three or four miles south of Bristol, near the track, are several small lakes which are literally covered with wild geese and ducks during the fall and early winter months. Only a few local hunters have ever disturbed the water fowl here, and abundant success still awaits the sportsman. A farmer near by has thus far about monopolized the business by scattering heaps of wheat screenings at points along the shore, attracting immense flocks of the birds to certain localities, and then trapping them by an ingeniously arranged net. Fort Collins, five miles south, would be the proper rendezvous for hunters.

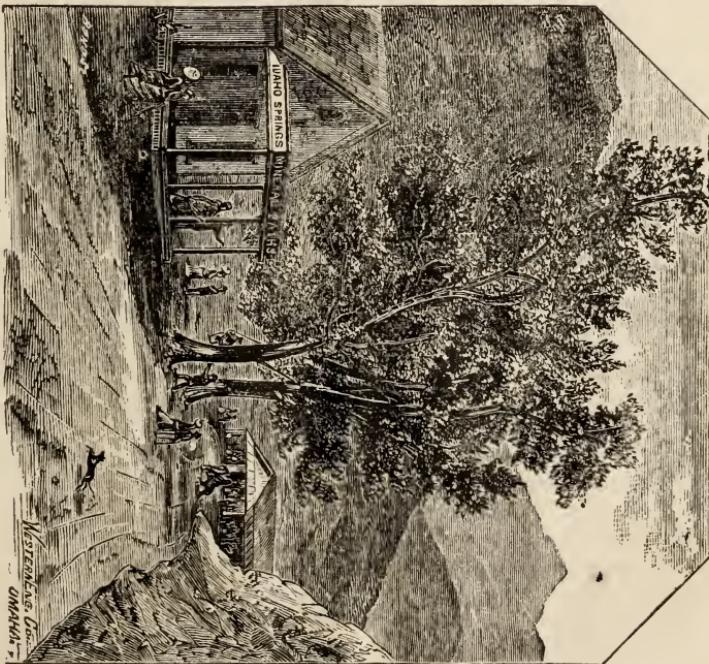
Cache la Poudre Valley.—One of the very finest rural landscapes of the route was presented as we emerged from the last range of hills bordering Cache la Poudre Valley on the north. Looking ten miles up the stream on a bright, Colorado day, our eyes could almost trace the shadows of its magnificent debouch from a wild gorge in the Rockies. Eastward, for thirty miles, to its junction with the South Platte, is one of the loveliest valleys in all the country. It is from five to ten miles wide, and from its rich golden wheat fields on either side, slopes down gradually to broad, level meadows, the tall, luxuriant grasses of these fringing a stream of remarkable purity and beauty. It is thickly studded with excellent farm buildings from the very foot of the mountains to its eastern extremity. Over 250,000 bushels of wheat were produced here in 1877. Twenty farmers, whose homesteads joined each other, reported an average of thirty-three bushels of wheat per acre, and the cases are numerous in which from forty to fifty bushels per acre were produced from favored fields. Reliable authority places the average yield throughout the entire valley at thirty bushels per acre. Extensive flouring mills in the valley work up a large portion of the wheat. Irrigation is necessary everywhere. Several very fine dairies are in operation near the line of the road, one of these producing a really "gilt-edge" quality of butter, and selling the same, by special contract, the year round at from thirty-five to forty cents per pound. Breeders of fine blooded sheep have also found congenial quarters among the adjacent hills. Wild lands, of which there are yet plenty, sell at from four to ten dollars per acre. Improved lands at from twenty to forty dollars. All produce finds a very ready sale at Cheyenne, Denver and in the mining and lumbering camps in the mountains.

The great pineries near the head of the stream, twenty miles distant, are contributing largely to the lumber supply of Denver, Cheyenne, the Government posts, and to the plains country for a distance of a hundred miles down the Platte. Two firms employ large gangs of men to cut and float the timber to mills located at Greeley, twenty-five miles down the valley. These firms



UPPER FALLS, NORTH BOULDER, COL.

REACHED BY UNION PACIFIC RAILWAY, COLORADO CENTRAL BRANCH.



CELEBRATED MINERAL BATHS, IDAHO SPRINGS, COL.

have, in connection with their saw mills, improved apparatus for planing, matching and dressing lumber in different ways, and also for the manufacture of shingles on a large scale. Over 1,500,000 feet of lumber are thus handled per year. Silver has been discovered below the logging camps, a short distance inside the mountains.

The Upper Cache la Poudre furnishes unexcelled trout fishing, deer and bear hunting, and superior scenic attractions. Residents from all of northern Colorado and southern Wyoming consider this a favorite resort, and during the summer months can be found at almost every turn, either camping out in the secluded glens or faring more bountifully at the many ranches among the foothills. Excellent home-cookery, with such items as fresh butter, milk, eggs, vegetables, and at some points mountain trout and clean beds, can be enjoyed at an average of \$1.50 per day. Of camping-out we shall have more to say in future pages.

We made a five days' trip to the head waters of the Cache la Poudre, a little beyond the usual range of tourists, and found a region so wild and so delightful for its very solitude that we were loth to leave it. At many points dense pine forests would crowd the waters' edge, then suddenly a beautiful park or meadow would tempt us to a halt. Scarcely a mile of ascent was accomplished without crossing a swift, clear, spring-fed brook. Rivers and brooks were fairly swarming with trout, and among the mountains on either side elk and deer betrayed their presence almost hourly. Though the altitude is great—about 8,500 feet—some of the most tempting sites imaginable for ranches were found at many points. The growth of wild fruits—especially the strawberry and gooseberry—the flowers and grasses furnished endless surprise. At an elevation of 9,000 feet, where plenty of snow was yet found (in June) in some of the gulches, we found a stock ranch where a large herd of fat cattle attested the value of the native grasses. The owner informed us that he had taken little pains to feed or shelter the animals in winter, even at this altitude.

Fort Collins—Is located on the south-side of the Cache la Poudre, distant from Cheyenne 50 miles, and having an elevation above sea level of 4,815 feet. It is the county seat of Larimer county, and the principal trading point in the upper end of the valley. Population, 700. Has a bank, newspaper, two good hotels, extensive flouring mills, etc. Among the points of interest for the tourist are Rists Cache la Poudre and Moore Cañons, distant from six to ten miles. The Cache la Poudre here affords a superb water-power. Fort Collins is general headquarters for hunters and tourists. Duck-hunting is always good up or down the river; a single hunter of our acquaintance having killed nearly 300 of the mallard and other varieties during a two weeks' sojourn in the fall of 1877. The completion of the Colorado Central Railway has served to give the town and valley new life, and evidences of increased prosperity are already apparent in the numerous improvements in vogue. Among the railway company's improvements here will be noticed a large and handsome brick passenger and freight depot.

Water-tanks.—Passengers almost invariably note a peculiarity of the handsome brick and frame water-tanks which are found by the side of nearly every mountain stream en route. No pump, windmill or pipe is apparent, but the purest of mountain water pours into the tender at almost every halt. The rapid fall of the streams has been utilized by tapping them half a mile above

the track, laying iron pipes beneath the ground and carrying the water along until sufficient "head" has been gained, when the pipe is turned upward into the tank on the principal of a syphon. The pipes are below the freezing line, and are therefore, always on duty, while the amount of water in the tank is regulated by a suitable "escape."

Rapid Settlement.—The advent of the railroad here, as elsewhere, has stimulated settlement and development to a marked degree. The rich and more conveniently irrigated valley lands were put under cultivation ten or a dozen years ago, while the warm, sandy uplands went begging. It has been demonstrated in the last few years that these uplands give the most reliable and wonderful yields of wheat, and during the past fall and winter they have been taken up or purchased on every hand. As we fairly left the valley of the Cache la Poudre, we found hundreds of these new homesteads, many of them plowed up and built upon during the first few months after the iron horse sounded his greeting. It is estimated that the acreage of wheat will be easily increased one-third during 1878, and that the yield in the four great wheat counties bordering the Colorado Central railway will not fall short of 1,600,000 bushels. Remembering that we were in the garden spot of Colorado, that nearly every acre of all that grand region will be rendered abundantly productive, and that not half the area has yet been utilized, we cannot but think of the wealth of possibility in store.

Loveland.—Distance from Cheyenne, 61 miles; altitude, about 4,800 feet. Loveland was founded during the building of the road, and was named in honor of the president of the company. It is located on the broad and level bench lands on the north side of Big Thompson river. Forty-five bushels of wheat per acre were produced last season on the ground now occupied by the fine brick depot, and from the plat since partially laid out as a town-site were harvested nearly 10,000 bushels, just as the graders of the Colorado Central were ready to sink their spades. "Uncle Davy Barnes," known all over Colorado as a pioneer, owned the 200 acres which produced this handsome yield, and his crop receipts for the season enabled him to build an extensive grist-mill on the river-bank near by. The town consists of several handsome brick business houses and a dozen lesser frame buildings, and draws its support from the thickly settled Big Thompson Valley. The pretty little village of St. Louis is located a mile below in the same valley. Big Thompson Valley has always been noted for the excellence of its crops, these embracing wheat, oats, barley, all hardy kinds of vegetables, and the small-eared varieties of corn. The principal features of valley, stream and soil, are identical with those of the Cache la Poudre.

Estes Park.—Rapidly growing into favor as a pleasure resort, and a nook now destined to leap to the front rank, is Estes Park, twenty-five miles west of Loveland, at the northeast base of Long's Peak. The first ten miles of the wagon road thither is first-class, and the remainder, with improvements to be put upon it early in 1878, will be one of the most charming mountain highways in the Rockies. Stages will commence regular trips early in the season. The Park is a beautiful little mountain-locked basin, 9,000 feet above the sea, its surface composed of meadows and groves, with here and there the prettiest trout brooks imaginable. "Camping out" can here be enjoyed to the utmost. As one visitor says it is "replete with grassy slopes, crystalline streams that course down from the melting snow-banks, broad zones of pine forests, towering

heights of mountains and shady nooks. It is just such a resort as the sportsman delights in, or the tourist loves to frequent. The streams are filled with trout; the pines abound with noble game." The ascent of Long's Peak, 14,271 feet above the sea, can best be made from here, and is in itself an episode worth a visit to Colorado. The great gorge leading from the Park into the heart of the mountain, with vertical walls of 3,000 feet, is one of the awe-inspiring attractions.

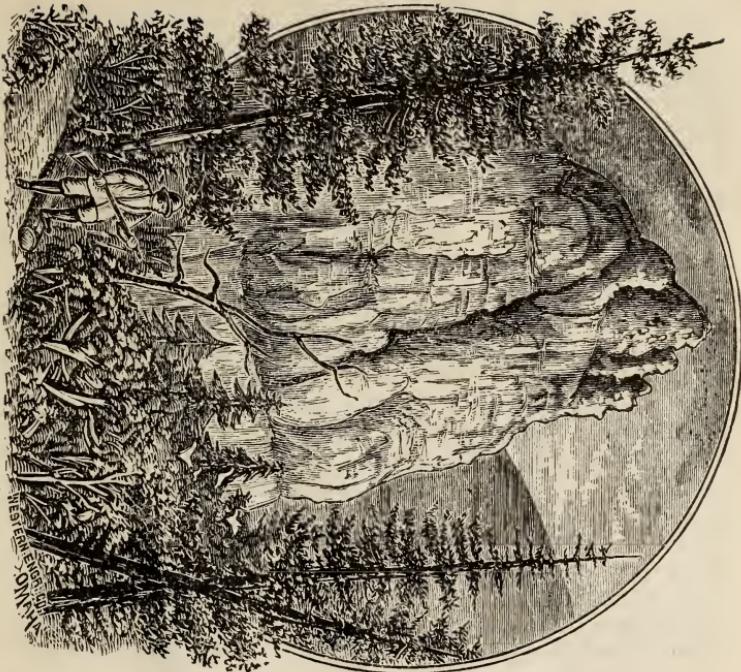
No wonder that haughty Englishman, the Earl of Dunraven, has been working so persistently to establish his title to twenty or thirty thousand of the best acres of Estes Park. With its battlements that would have crazed a Roman conqueror; its forest homes of the elk and deer; its streams that vie with Scotland's purest, and its thousand acre gardens of richest grasses and most delicate flowers—we say with all these and much more, can a British earl be blamed for coveting it? A European lord of the sixteenth century would have sacrificed half of his most trusty followers in the gaining of such magnificent possessions and thought his conquest cheap at that.

The McGregor House, an excellent mountain hostelry, is located in the Park, as well as lesser institutions of this class. Board can be obtained at from \$1.50 to \$2.50 per day. The only stage line heretofore entering the Park was from Longmont, but Loveland's accessibility, as already noted, will lead to increased facilities of entry from that point, in time for the travel of 1878.

Great Irrigating Enterprise.—As we journeyed southward from Loveland, we crossed the broad dividing plateau lying between the Big and Little Thompsons. This country is ranked among the best for farming in the State, but suffers from having no adequate irrigating facilities. A project is now well under way, however, which will remove this drawback. A canal twenty-five feet wide and three feet deep is to be constructed from a point on the Big Thompson, just inside the mountains, out over this divide, and thus throw thousands of productive acres of high lands open to settlement.

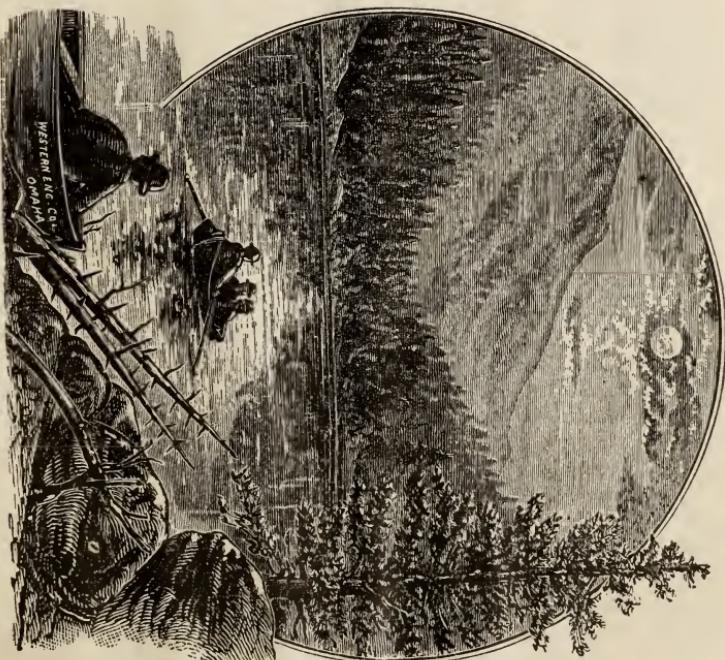
Berthoud.—Descending again we crossed Little Thompson valley at Berthoud, 69 miles on our way from the Union Pacific. The station is new, like all other features of the road, and was named in honor of Captain Berthoud, the well known chief engineer of the Colorado Central. The valley of the Little Thompson is less extensive than those of its neighboring streams and the attention of settlers has thus far been mainly given to stock raising. The breeding of blooded horses, cattle and sheep is the favorite branch of business there. The valley is always represented at the State Fair with fine roadsters, Shorthorn cattle and Merino sheep, and selections from these flocks and herds are being rapidly introduced into the best stock ranches of the west.

View of the Mountains.—We enjoyed an ever changing vista of the Rocky Mountains from the first, as our course was parallel with them and only from five to ten miles away. But while sweeping over the high divide between the Little Thompson and St. Vrain we were more than ever impressed with their majesty and grandeur. Long's Peak, well named the "American Matterhorn," seemed but a pleasant hour's walk away, while Gray's Peak and Pike's Peak—all nearly as high as Mt. Blanc—furnished fitting limit to the view 100 miles south and 75 miles west. We passed this point of glorious review late in the afternoon, when the setting sun tinged the long expanse of snowy crests with royal purple and the richest tints of carmine; even the rugged sides and depths



THE DOME, BOULDER CANON, COL.

REACHED VIA COLORADO CENTRAL BRANCH OF THE UNION PACIFIC RAILWAY.



GREEN LAKE, GEORGETOWN, COL.

WESTERN ENG. CO.
OMAHA

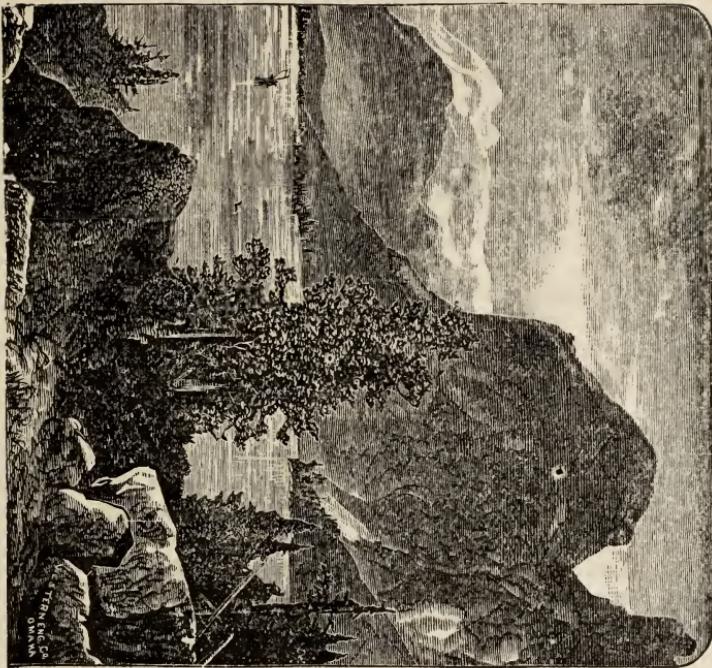
and verdure of the lower ranges were brought to our vision with indescribable beauty and clearness. Long after the day-god had dropped behind the curtain which veils a continent, the sky was touched with tints which art can never copy. Verily, a sunset in the Rocky Mountains can never be reproduced, either in art here or in nature elsewhere.

Longmont—78 miles, a thriving village of 700 inhabitants, in the beautiful St. Vrain Valley. Altitude, 4,957 feet. The name of the town was suggested by its majestic sentinel, Long's Peak, while the creek, whose crystal waters flow through every street, is inseparably connected in history with the veteran explorer and trader, Colonel St. Vrain. One of the Colonel's first fur-trading posts was Fort St. Vrain, located some twenty miles below and occupied more than forty years ago, when Fort Pierre, on the Missouri river, was the nearest similar refuge for the adventurous spirits of the Northwestern fur companies. Longmont boasts three flouring mills, two hotels, two weekly newspapers, a bank, and other necessary adjuncts to the well being of a thrifty out west town. Through the liberality of the railway managers and the enterprise of local dealers in produce the town has been rendered quite an important shipping point. Thousands of tons of hay and grain from St. Vrain and Left Hand valleys are being shipped to Denver and the mountain towns. Thirty thousand bushels of wheat were raised in the vicinity and marketed there the past season. There is a tri-weekly stage line from there to Estes Park. Distance, 32 miles; fare \$5. Several lakes in the vicinity afford excellent duck-hunting and the upper St. Vrain, fifteen miles distant, is noted for its trout.

The mountains now seemed to make their sharpest curve to the southeast, and as we whirled across the valley of St. Vrain and Left Hand, toward Boulder, we pointed straight for them. Ni Wot, 84 miles, is a small station for the convenience of the thickly settled agricultural districts thereabouts. Seven miles more across this fertile continuation of Colorado's wheat granary, right under the shadow of the rocky cliffs and we were at

Boulder—91 miles; elevation, 5,536 feet; population 3,000. Boulder bids fair to rank third in the list of Colorado's cities. The city now holds within its ambitious grasp the combined commerce of valley and mountain for many miles. Within a radius of twenty miles are the thickly settled farming regions of North and South Boulder creek, Left Hand and St. Vrain creeks; the great silver mines of Caribou and Nederland; the gold mines of Gold Hill, Sunshine, Tellurium, Salina, Magnolia, Jamestown, Sugar Loaf, Left Hand and other districts, and the Erie, Davidson, Marshall, Barber and half a dozen other coal deposits. Large deposits of iron ore of good grade are also found in sight of the city. These are all made thoroughly tributary to Boulder by a splendid system of wagon roads and stage lines provided by her sagacious citizens. Her grand cañon is simply a mountain gateway at the entrance of which all these interests concentrate.

Boulder has two railroads, with a third in course of construction, two telegraph lines, three good hotels, two newspapers, smelting works, two flouring mills, two national banks, a fine system of water works and the Colorado State University. The latter was completed two years ago costing \$40,000. Its dimensions are 97x112 feet, four stories high. It occupies a commanding position in full view of our road on an eminence south of the city. Unexcelled water power, abundance of fuel and other auxiliaries combine to render Boulder a splendid



GOLD LAKE, NEAR BOULDER, COL.

REACHED VIA COLORADO CENTRAL BRANCH OF THE UNION PACIFIC RAILWAY.



MOUNT OF THE HOLY CROSS, NEAR GEORGETOWN.

field for manufacturing enterprise. Already the principal fork of the creek is strung with mills, smelters, crushers and concentrating works far up into the mountains. But the supply of ores from the mineral belts above and of wheat from the fertile valleys below overflows these and is to a large extent carried to other points. Indicating the amount of travel and business here it may be stated that the two principal hotels registered 15,000 arrivals during 1877; one bank does an exchange business of \$500,000 per annum; the post office issued and paid money orders amounting to over \$50,000 and handled 500,000 messages in 1877. Annual fairs are held here in the interest of agriculture, stock-raising and kindred pursuits.

Boulder county is third on the list in the State in the amount of taxable wealth possessed. The total valuation for 1877 was \$3,152,260; acres assessable, 110,151; wheat raised, 500,000 bushels; hay, 30,000 tons; average yield of wheat per acre, 30 bushels; average yield of each acre cultivated, \$30; total value of farm crops for the year \$1,800,000; estimated yield of mines, \$800,000. The officials in making this report add that only one-third of the agricultural area of the county is utilized. The value of manufactured articles is placed at \$500,000. Only claiming a population of 12,000 Boulder county, therefore, produces *an average of over \$250 for every man, woman and child within her borders.* What community of producers in the east can make such a showing? Indicating social culture is the item that the citizens are taxed over \$20,000 for musical instruments, and Boulder county is but a fair average of the others whose resources, progress and attractions are linked inseparably with the history and stimulating influence of the Colorado Central Railway.

The Mines.—Among the hundreds of rich mines which are tributary and send their treasure down through Boulder are the "American," gold, at Sunshine, 5 miles distant, yield in 1876 and 1877 \$230,000; "John Jay," gold, on Jim creek, 13 miles distant, yield for the past twenty-two months \$70,000; "Melvina," gold, 9 miles, yield \$138,000 in twenty-eight months; "Ni Wot," gold, in Ward district, 25 miles, has turned out \$500,000; "Caribou," silver, at Caribou, 22 miles, has produced nearly \$1,000,000 and sold for \$3,000,000 to German capitalists a few years ago; "No Name" and "Sherman," Caribou, silver, have produced \$250,000. The ores of Boulder county mines are essentially "high grade" and yields of special lots have often been enormous. For instance, the "Melvina" ships small lots of ore nearly every month which yield from \$5,000 to \$14,000 per ton. The average yield of all the ore sold has been 28 cents per pound. The visitor can step into Church's sampling and crushing works at Boulder, almost any day, and see ore from the "Smuggler" which yields *five dollars per pound in gold.* Ore from the "John Jay" has averaged \$1,000 per ton for the past six months. "American" ore assays all the way from \$100 to \$100,000 per ton, and one lot of five tons shipped to the Omaha Smelting Works yielded \$27,500 to the owners of the mine.

The coal mines of Boulder county are of great extent and value, and have yielded over 100,000 tons the past year. The product is entirely bituminous, selling at Boulder at \$2 to \$3 per ton. Miners get from 75 cents to \$1.15 per ton for mining.

Distances, Rates, Altitudes, etc.—Following are prominent points tributary to Boulder, with their altitudes above sea level, distance from the city and modes and expense of reaching them:

Boulder to	Miles.	Altitudes.	Conveyance.	Fare.
Boulder Falls, Boulder Cañon	10	6,800	Tri-weekly stage.	\$1.50
Bear Cañon	4	5,600	*	...
Caribou	22	9,200	Tri-weekly stage.	3.50
Estes Park	35	8,000	Semi-weekly "	5.00
Gold Hill	10	7,100	Daily "	1.50
Gold Lake	15	8,000	*	...
Hot Springs, Middle Park	63	8,600	*	...
Springdale, Seltzer Springs	12	6,200	Tri-weekly stage.	2.00
Long's Peak	45	14,252	*	...
Magnolia	8	6,500	Daily "	1.25
Nederland	18	8,800	Tri-weekly "	3.00
Rollinsville	23	8,000	" "	3.50
Sunshine	5	6,500	Daily "	1.00
Sugar Loaf	10	8,500	" "	1.50
Salina	9	6,400	" "	1.40

Health and Pleasure Resorts.—Boulder and vicinity are prolific in these. Down the valley, within a radius of ten miles, are dozens of pretty lakes which are the favorite resort of geese, ducks and brant. Half a day's drive, over smooth valley roads, will take the sportsman to four or five of these, and land him back at his hotel door, with his game pouch full, if he is anything of an expert. Among the mountains back of the city, bear, deer and grouse abound, while high up the streams mountain trout are ever ready to tempt the angler. The principal mineral waters are at Springdale on James creek, 12 miles distant, at an altitude of 6,120 feet. The drive is one of the finest in Colorado, the location of the Springs a perfect little gem of loveliness in the midst of rich mines, and hotel accommodations are first-class at the moderate price of \$2 per day. The water bubbles from the bottom of a large basin in the solid rock, is a lively, sparkling seltzer, highly recommended for scrofula, dyspeptic and blood disorders and of the following component parts:

	Grains.
Sulphate of soda	129.12
Carbonic of lime-bi-carbonate in the water	52.00
Chloride of sodium	5.96
Iodide and bromide of sodium	1.56
Bi-carbonate of soda	6.56
Bi-carbonate of iron	4.80
Bi-carbonate of magnesia . . . . .	.80
Silicate of soda in the water	4.80

Weight of contents of one gallon 205.60

The drives are numbered by dozens and compass every phase of mountain and plainland scenery. Of course no visitor would miss Boulder Cañon, for that is to Colorado what the Yo Semite is to California. A famous writer says: "We have read of Alpine scenery and of the Yosemite Valley, and have seen Niagara Falls, Delaware Water Gap and the passage of the Potomac through the Blue Ridge, and we pronounce them all as tame and common-place when compared with the scenery of this wonderful cañon." Entering the cañon just above the city the road for miles winds in and out, at times overhanging the stream, then crossing by primitive bridges and on and up the magnificent rocky opening. Here the walls running up majestically 2,000 feet, there a stretch of flower-decked roadside, below always the crystal stream, foaming and leaping from

* Private conveyance; carriage hire, single team, \$5.00 per day; double, \$8.00.

shelf to shelf in its hurry to reach the plain. The eye never tires of this infinite variety and blending of rocks and dell, refreshing foliage and inviting gorges. Ten miles up are the Falls, and no tourist should stop short of these. The water drops some forty or fifty feet from the shelving rock into a deep, narrow pool, presenting amid the giant buttresses on either side a charming sight. This ride can be made in half a day, if the visitor is hurried, or can be extended indefinitely up to the mining camps near Nederland and Caribou, and on over to Middle park, if desired, as an excellent mountain roadway is laid thither. Stages pass the Falls daily in summer; fare up and back, \$2.50.

A fine two-days' ride is from Boulder to the Sunshine gold mines—through pine-covered foot-hills and along the sparkling Gold Run—6 miles; to Gold Hill and Gold Lake—a grand climb among rich mines and to one of the prettiest sheets of water in the Rockies—10 miles; to Camp Providence—location of the John Jay mine—6 miles; to Jamestown, down James Creek, 4 miles; to Springdale—location of the celebrated Seltzer Springs and Big Blossom mine—2 miles; return to Boulder over Buckingham's toll road, 14 miles; total, 42 miles. Springdale would be the best point to remain at over night. This jaunt covers the richest mining region, and the choicest mountain as well as valley views.

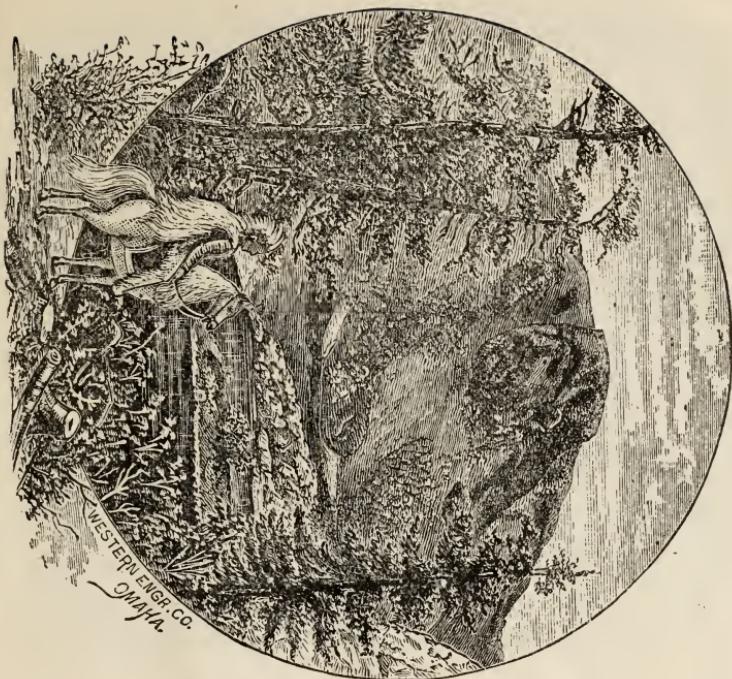
Or for parts of a day go to Sunshine, 6 miles; Gold Hill, 3; Salina, 3; return to Boulder through Boulder Cañon, 9; total, 21 miles. Another favorite route is from Boulder into Bear Cañon—a charming piece of scenery—to the mines of Magnolia District, 11 miles; return down through Boulder Cañon, 8 miles; total, 19.

Board at Bouider is \$2 to \$3 per day, and at all mountain towns adjacent will average \$2 per day. Toll on mountain roads will average \$2 per day, and, as before stated, outside rates on livery teams are \$5 and \$8. A first-class omnibus line transfers passengers from all trains.

Resuming the journey we passed Lakeside, 94 miles, named from a lake on the left of the road; Davidson, 98 miles, the principal coal mining town on the line; Coal Creek, 100 miles; Church's, 109; Ralston, 115; all simply sidings for the accommodation of local trade and the large freight traffic. Two miles west of Ralston are the Ralston Coal Mines. Unlike most other western coal deposits, these veins are vertical. In the two mines it is estimated that over 6,000,000 tons of a fair quality of soft coal are "in sight." A narrow gauge railway, connecting the mines with the Colorado Central, is in course of construction.

Golden.—One hundred and seventeen miles; altitude, 5,729 feet; is the county seat of Jefferson county, and claims a population of 3,000. Golden is already called the "Colorado Birmingham" from its favorite situation for manufacturing and its rapid progress in that line. The city lies just within the first foot-hills, 15 miles west of Denver. Springing from the mouth of one of the grandest of cañons, three-fourths of a mile above the city proper and flowing through the heart of the town, is Clear Creek. For the first mile of its course after leaving the mountains the stream falls some 75 feet, and as the volume of water exceeds that of any other stream in northern Colorado, except that of the Platte, it furnishes a degree of power that can scarcely be calculated, much less fully utilized.

Both sides of the stream are already strung with busy wheels. We first



THE SPHINX, NEAR CENTRAL CITY.

REACHED VIA COLORADO CENTRAL BRANCH OF THE UNION PACIFIC RAILWAY.

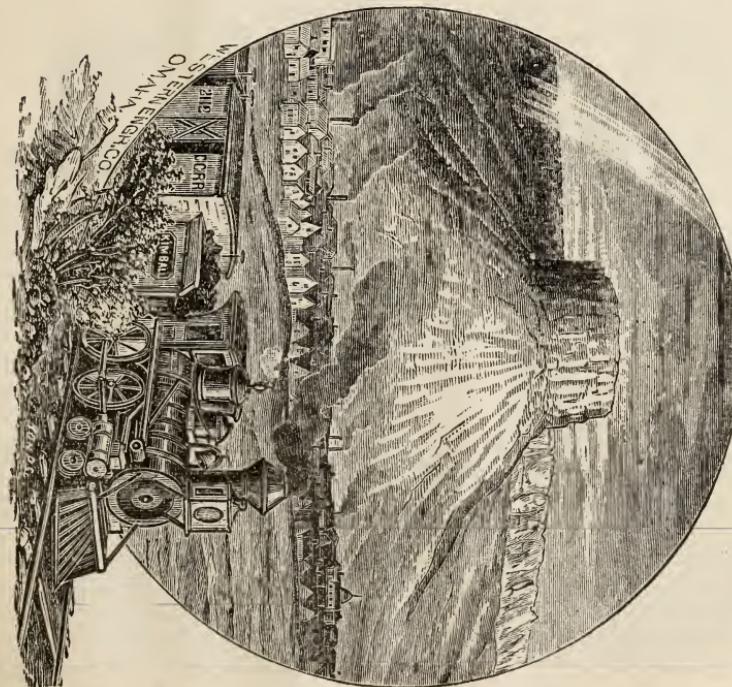


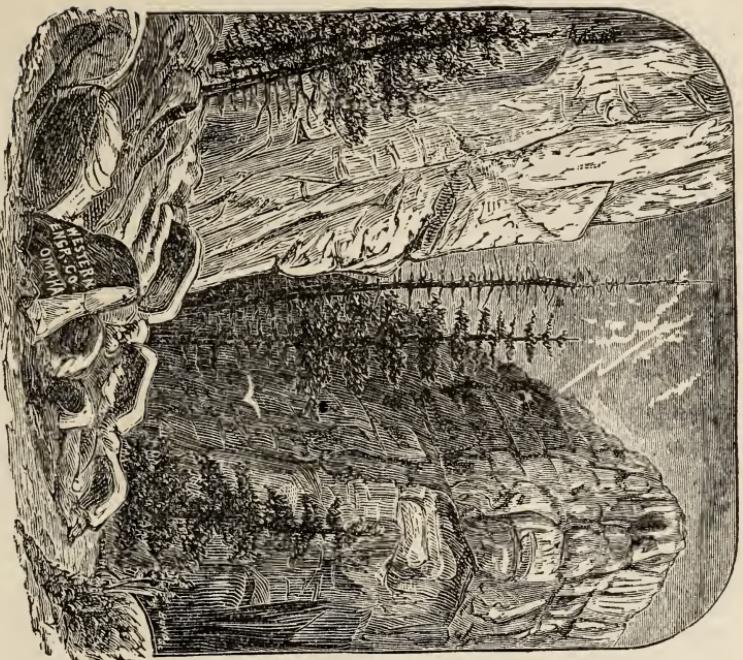
TABLE ROCK, GOLDEN CITY.

noticed the extensive shops of the Colorado Central Railway, which cover several acres of ground, and are being rapidly enlarged. Here passenger and freight cars are built, engines rebuilt, and every species of railroad repairing accomplished. A short distance south of these are the Golden Smelting Works, out-growths of the great mining industry in the mountains above, which turned out \$300,000 in gold and silver during 1877. Close at hand are works engaged in smelting copper from the valuable copper mines located 8 miles south of Golden, on Bear Creek. These works treat six tons of copper ore per day, obtaining therefrom 10 per cent of copper and an average of 30 ounces of silver per ton. Farther up the stream, in the heart of the city, are three large flouring mills, which turn out 30,000 sacks of flour per annum. The extensive buildings of the Golden Paper Works—the only institution of the kind between Omaha and Salt Lake City—are next noticed. The mills, run by water power, supply the newspapers of the State and show a business of \$25,000 per year.

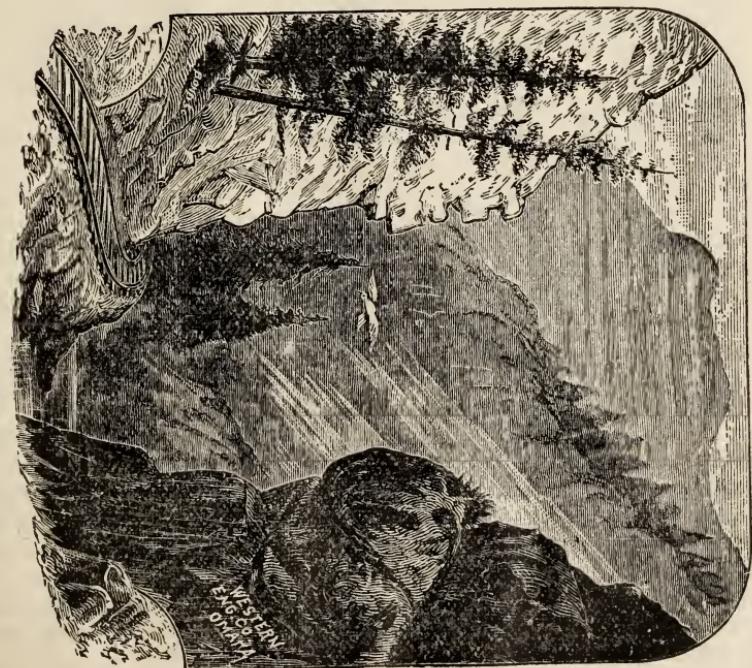
Two companies are engaged in manufacturing fire-brick, tile and pottery from the superior clay found near by. The Union Pacific and Kansas Pacific railways, the Rolling Mills at Laramie City, and Prof. Hill's Smelting Works, at Black Hawk, obtain their tiles, fire brick and dimension brick from this source, while miscellaneous orders are constantly received from points as far east as St. Louis, and west to the Pacific ocean. Half a million fire brick and one million red brick were produced during 1877. Fire brick sell at \$50 per 1,000 for first quality, and \$35 for second. The Trenton Smelting and Dressing Works is a very extensive establishment, in the upper part of the city, for the treatment of gold and silver ores; capital, \$150,000; capacity, 10 tons per day. A New Jersey company is at the helm and has bright prospects before it, as thousands of tons of ore await treatment in the different mining camps from 20 to 40 miles above. Then there are planing mills, breweries, a foundry, etc., all combined, rendering Golden not only a very important and productive center, but an interesting one for the tourist as well.

Besides the copper mines already noted, there are within the limits of the town three coal banks, which are being placed in condition to easily yield 400 tons of coal per day, and splendid deposits of hematite of iron and magnetic iron in sight of the city. What has been said of Boulder in connection with the mining interests is especially applicable to Golden. The mines of Gilpin and Clear Creek counties, which have furnished three-fourths of all Colorado's gold and silver yield, have no other outlet or transfer point, and through imperative freaks of nature, they never can have. Clear Creek Cañon has proved a giant causeway, through which millions of treasure have been poured, as well as a mighty and wonderful chasm to be sought and admired by the travelers of two hemispheres.

The general offices of the Colorado Central Railway are located at Golden, and here the narrow gauge divisions branch off to the mountains. The main line continues its course onward to Denver, while, as a matter of convenience for southern travel and shipments, an additional narrow gauge division is being constructed south to Acequia, on the Denver & Rio Grande Railway, some 16 miles distant. Jarvis Hall, Colorado's most notable college for young men, is located here. The institution has numbered among its pupils residents of many different states and territories, and gains ground in popular favor every day. It is noticed that youth of the east, who from their delicate organism and tendency



THE GORGE AT DOME ROCK, BOULDER CANON.
REACHED VIA COLORADO CENTRAL BRANCH OF THE UNION PACIFIC RAILWAY.



ABOVE BEAVER BROOK, CLEAR CREEK CANON.
REACHED VIA COLORADO CENTRAL BRANCH OF THE UNION PACIFIC RAILWAY.

to disease, cannot, in those latitudes, endure the sedentary life necessary to the acquirement of an education, here prosecute their studies and gain a new lease of life at the same time. This atmosphere, itself a tonic, this almost perpetual sunshine, and these exhilarating walks in Nature's charming by-ways, tell the whole story. The State School of Mines is also located here.

Among the most pleasant drives are those to Bergen Park, a lovely little basin near Bear Creek Cañon, where trout, wild flowers and shaded picnic grounds are leading attractions, 8 miles; to Brookvale, well up in the mountains, where will be found good fishing and nice hotel accommodations, 12 miles; Cresswell, a ride abounding in beautiful valley and mountain landscapes, 6 miles; "Table Rock" is a prominent attraction in the immediate vicinity, rising nearly 1,000 feet above the town on the east.

INTO THE AMERICAN SWITZERLAND.

Clear Creek Cañon.—Of course one of our principal objects in visiting Colorado was to explore the wonders of Clear Creek Cañon and to dive into the mysteries of the gold and silver mines beyond. So at Golden we entered the neat and cosy little carriages of the three-feet gauge and commenced the really novel part of an interesting journey. Go with us, reader, on this exciting climb, and enjoy the richest two hours feast afforded on any railroad track in the world. The ascent commences at once, and soon we reach the narrow opening which constitutes the mouth of the cañon. Lofty foot-hills, covered with stunted pines and jutting rocks, crowd close on either side. In a moment these are lost in the mightiest mountain walls themselves. Across the stream and a hundred feet above it, clinging to the bare and vertical rocks by a net-work of clever timbering, is one of the flumes carrying fertility to the thirsty soils of the valley. We follow the foaming, leaping torrent constantly, for we are now between unbroken buttresses rising 2,000 feet above, and forbidding all thought of deviation.

Sometimes the stream almost eddies against our track; sometimes we look upon it far below, but still beating our stony parapet. Then we cross and re-cross until we are bewildered, and try in vain to believe ourselves going only toward the setting sun. Straight track is unknown. We are on a highway of short tangents, of innumerable short curves. One instant an apparently solid wall runs to the clouds across our track, but in the next we are twisting sharply around or under it, our cars creaking with the strain. At times a path has been blasted from the mountain sides for our little railway, and the fallen fragments of granite have turned the stream or thrown its current into a hundred fantastic cataracts and eddies. Steadily we climb at the rate of 170 feet to the mile, ever-changing pictures of rarest beauty breaking upon the vision. The frowning rocks grow more terribly sublime, their height increasing and the chasm at times narrowing until the eye can scarcely scale the summits from the car window. The deep green foliage of the pine is rarely absent, the trees striking root in every cleft and in every grotto. This presents constant striking contrasts to the sombre gray and brown of the rocks. The roadway could not be more attractive or secure, for it is carved out of the solid rock, or else where it has been crowded into the stream the ties are imbedded in masonry. The bridges are built of iron; the station houses at places hang over the thundering stream by a system of architecture peculiarly their own.

We pass under hanging rock and can touch the wall on one side from the platform. "Mother Grundy," far up on the beetling crags, seems ready to gossip on this grand achievement of railway engineering, and Nature has chiseled her out enduringly. Eight miles from Golden is the romantic station of

Beaver Brook.—A mountain brooklet of the same name here finds access to the creek through a deep gorge and by a series of pretty cascades. Up to the left, on a cliff overlooking the track, is a dancing and picnic pavilion. It is reached by a long staircase from the other gorge, and is a favorite resort for Denver pleasure-seekers. On moonlight summer evenings the cañon walls are made to echo with music and laughter from this wild and curious eyrie. Fragrant flowers and beautiful ferns abound here, clinging to the crevices in the rocks and enlivening Beaver Gulch.

The Law of Exchange.—We pass a heavily loaded freight on its way to the mines and mills. Soon after we meet one equally heavily laden speeding to the valley by the simple power of gravitation. Let us see what they carry. The one ascending has among other items a car-load of salt, from Great Salt Lake, which came via the Union Pacific all this distance, and is now being taken to the great smelting works above, to perform its part in separating the metals from the ore. Another car bears hay from valley meadows to mountain stables. Mule-power is a grand lever up there, and can't be perpetuated without hay. Then there is an immense steam engine and mining machinery occupying another car. There will be thousands more before the ore channels are all developed, for mining is in its infancy here. Other cars are loaded with tons of flour, beef, groceries, vegetables and mining supplies of every nature. And this is only one train. Sometimes there are two or three a day, and this continues every day in the year, for mining communities *produce only gold and silver*. Everything else must go to them through this narrow and ever-beautiful pathway.

Coming down on the other train there was what? *Gold from Central! Silver from Georgetown!* Here was business on a specie basis, sure enough, and the simplicity of the transaction renders comment unnecessary.

A few miles above Beaver Brook the north and south forks of Clear Creek unite. One comes from the rich gold mining regions of Black Hawk and Central, the other from silver-crowned Georgetown. To penetrate and develop Colorado's two greatest mineral belts the railway has been extended up both of these cañons, past the mills and over and into the very mines themselves. "Forks Creek" is, therefore, quite an important junction, much freight business consolidating here, and no little passenger travel changing from one line to the other. We have taken the train for Central, and so pass up the north fork.

The Gulch Mines.—We are now in the very heart of the Rocky Mountains, where the giant barriers break away and assume new form and texture. Down below us are the gulches where, from 1859 to 1865, surged the feverish thousands, and where the yields of "dust" were reckoned in millions. Since that the gravel has been worked over many times, and it is estimated yet that almost as much gold has been lost as has ever been saved. As the ground becomes too "lean" for the average miner the Chinaman steps in and makes from one to three dollars per day. We can see large gangs of the Celestials at work, and have an opportunity of studying gulch mining practically.

Smelting Works.—Just before entering Black Hawk we notice, on the right,

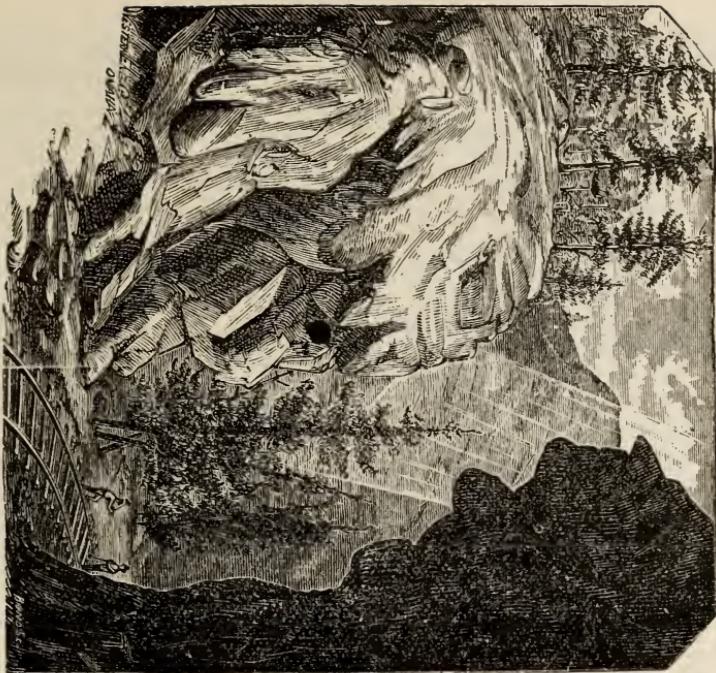
the Boston and Colorado Smelting Works. These are among the most extensive in the United States, and will well repay half a day's examination. They were established to treat gold ore in 1867, and with improvements since made the buildings cover five acres of ground. A capital of nearly \$1,000,000 is constantly employed. Seventeen furnaces are in constant operation, smelting sixty tons of ore daily, at an expense of over \$500 per day for fuel and labor alone. The smelting of silver ores was not undertaken until in 1873. Since that period *eighty-five tons of pure silver* have been sent from the works. The product, in silver and gold, since the first, has been as follows:

1868.	.....	\$ 270,886
1869.	.....	489,875
1870.	.....	652,329
1871.	.....	848,571
1872.	.....	999,954
1873.	.....	1,210,670
1874.	.....	1,638,877
1875.	.....	1,947,000
1876.	.....	1,995,000
1877.	.....	2,154,000
Total		\$12,207,162

THE GREAT GOLD REGION.

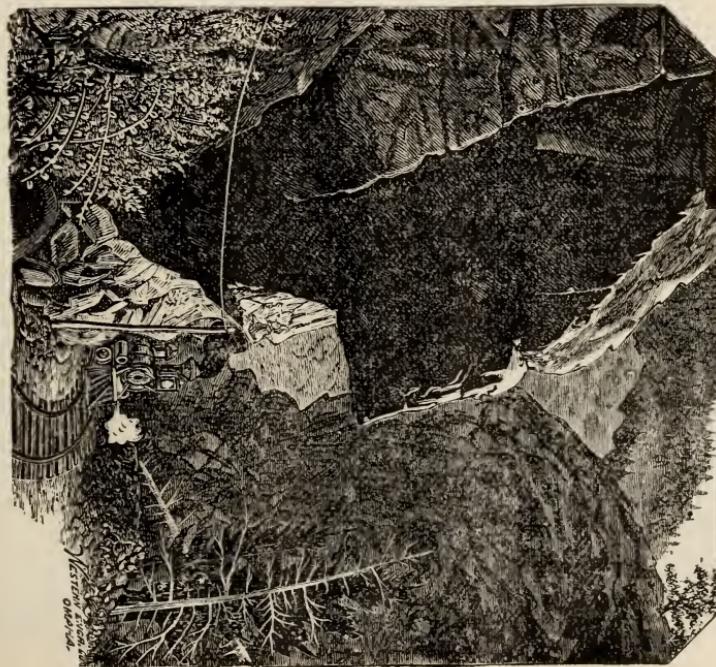
Twenty-two hundred feet above our point of entrance at the cañon, and twenty-two miles from Golden, is Black Hawk. A mile farther up is Central, and for two miles up the gulch from the latter place is an almost unbroken line of mining towns and mining enterprises. The first sight of these mountain towns is not easily forgotten. Far up the giddy slopes hang cottages seemingly ready to topple one upon another. In the ravines below are busy, bustling streets, lined with quartz teams and all manner of vehicles. Frank Fosset, Esq., of Central, describes the scene in this manner: "A main thoroughfare three miles in length winds among these granite hills, whose interiors are honey-combed with shafts, levels and tunnels. Beside the muddy stream lofty chimneys of huge smelting works are always burning. Beyond are stamp mills, whose stamps thunder with never-ceasing industry. Night and day the same work goes on uninterruptedly, week after week, year after year. Down in the depths, hundreds of feet from the sunlight, are other cities, less habitable but equally active. Here, by the dim candle light, hundreds of men wield the drill, pick and shovel, delving for the hidden wealth of centuries. These mines beneath the city help to swell the millions that steadily find their way into the channels of commerce."

Although one of the smallest counties, Gilpin (covering the mining region) has furnished half of the mineral yield of the state and is increasing its production yearly. The mineral belt here is about ten miles wide, extending into neighboring counties. The production in gold and silver, up to the present, has been as follows:



MOTHER GRUNDY, CLEAR CREEK CANYON.

ON THE COLORADO CENTRAL BRANCH OF THE UNION PACIFIC RAILWAY.



HANGING ROCK, CLEAR CREEK CANYON, COLO.

Previous to 1870	\$25,000,000
For 1870	1,267,900
" 1871	1,378,100
" 1872	1,389,289
" 1873	1,440,502
" 1874	1,695,804
" 1875	2,010,391
" 1876	2,135,000
" 1877	2,300,000

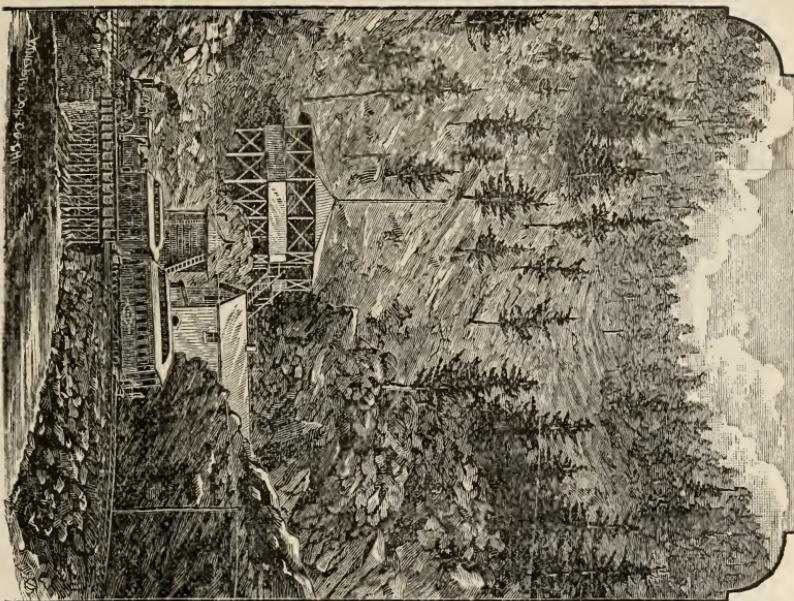
Total for Gilpin county in 19 years..... \$38,616,986

Eighteen quartz mills are at present at work, turning out about \$5,000 in gold daily. Among the principal mines are the "Gregory," depth 900 feet, total yield \$9,000,000; "Bobtail," 650 feet, yield \$4,000,000; "Gunnell," 650 feet, yield \$2,500,000; "Burroughs," 1,000 feet, yield \$1,500,000; "Kansas," 690 feet, yield \$1,500,000. There are many others which have produced all the way from \$500,000 to \$1,000,000. In 1877 there were less than 1,500 men engaged in mining, milling and kindred pursuits, and their production amounted to \$2,300,000, or over \$1,500 for every man engaged. The prosperity has really just commenced. It is as enduring as the hills, and with the excellent facilities now afforded for transportation by the Colorado Central Railway must soon increase many fold. Mining has developed from chance and guess work into a grand science. The ore channels are as numerous as the veins on our hands. They were never richer, never in such trim to yield the royal metals as to-day.

These towns combined have a population of about 5,000; Central being the county-seat and the acknowledged center of trade. It is solidly built of brick and stone, contains three banks, the Teiler House—one of the finest hotels in Colorado—two daily newspapers and a fine institution of learning. Altitude, 8,389 feet.

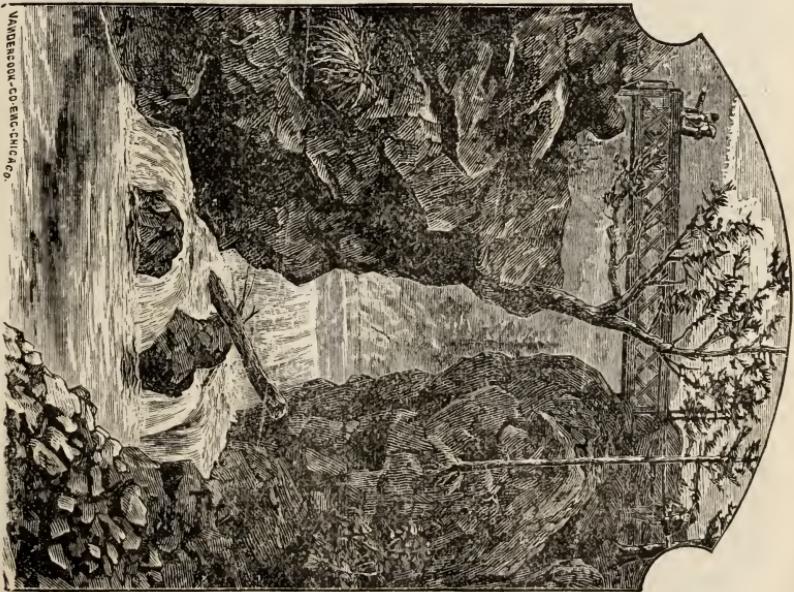
Railroading Among the Mines.—Leaving Black Hawk, our track runs up the right side of the gulch among the mills and past the open mouths of mining tunnels. Reaching Bates Hill we turn quickly to the left, leap the two principal streets of the city on a splendid iron bridge, and by several "tangents," at a heavy grade, soon find ourselves 500 feet above the bustling streets and busy mills, pushing steadily across rich mineral veins for Central. We cross the famous Gregory, Briggs and Bobtail mines, which are now producing \$50,000 per month in gold. We have only a mile and a half of actual distance to make, but travel *four* miles in order to surmount the wonderful grade. Clinging to the rugged sides of Mammoth Hill, overlooking the entire gulch, we have a view of snowy peaks, pine-covered mountains, mining enterprises and cities which leaves a life-time impress. James Peak, with its glittering summit of snow and ice, stands a fitting sentinel over all. From Central the road is to be extended at once to the silver mines of Caribou, eighteen miles distant. This extension will pass through some heavy forest and along the best mineral veins. The forest is quite an item, as timber is a great desideratum in mining, and is very scarce at these points. Indicating the present business of the road is the item that about 30,000 tons of freight are received by it at Black Hawk annually.

Points for the Tourist.—A week can always be spent profitably and pleasantly among the mines and mills. To learn how the ore is mined and how



BEAVER BROOK, CLEAR CREEK CANON.

REACHED VIA COLORADO CENTRAL BRANCH OF THE UNION PACIFIC RAILWAY,



“DEVIL’S GATE,” NEAR GEORGETOWN, COLO.

VANDERSON-COPE, CHICAGO.

the gold is separated from it, are the first items thought of. Then ride out to James and Buel Peaks, ten miles, where views of half of Colorado can be obtained, and where the prettiest lakes lie high up among the summits, with their settings of gigantic walls and towering pines. Bellevue and Bald Mountains, $2\frac{1}{2}$ and $1\frac{1}{2}$ miles, respectively, are admired localities, and can easily be visited together in half a day. The shortest trail to Hot Springs, Middle Park, is from Central via James Peak, distance 44 miles. First-class hotels at Central, \$4 per day; carriage hire, \$8 to \$12.

Instead of returning to the Forks of the Creek and going from thence up to Idaho Springs and Georgetown by rail, we took a carriage through the noted Virginia cañon to Idaho, 6 miles. En route are fine views of the snowy range, and the trip down Virginia cañon is one of the most enjoyable on the line. Much of the descent is at the rate of 600 feet to the mile, but the roadway is everywhere in excellent trim.

Idaho Springs.—A lovely watering place in the valley of South Clear Creek, 34 miles from Denver by rail. Elevation, 7,800 feet. The village contains some 500 inhabitants, whose principal occupation is mining; the gulches here still yielding abundantly, and a number of good quartz mines being vigorously worked. The locality is not only greatly favored as a summer resort, but captivates many to prolonged winter sojourns. The delightful coolness of summer nights is always noted, and the clear, sunny days of winter woo visitors to the open air almost constantly. The valley is here sheltered by several very high and noted landmarks, the "Old Chief," "Squaw" and "Papoose" being among the number, and lifting their heads from 10,000 to 11,000 feet above the sea. The famous Soda Springs, however, are the grand attraction. There are eight of these, ranging in temperature from 60 to 110 degrees. Two large swimming baths, and numerous smaller apartments for hot and cold shower baths are at hand, with such convenient features as dressing rooms, waiting rooms, etc. Following is an analysis of these waters, the constituents being from one gallon:

Carbonate of Soda.....	30.80
Carbonate of Lime.....	9.52
Carbonate of Magnesia.....	2.88
Carbonate of Iron.....	4.12
Sulphate of Soda.....	29.36
Sulphate of Magnesia.....	18.72
Sulphate of Lime.....	3.44
Chloride of Sodium.....	4.16
Chlorides of Calcium and Magnesium, of each a trace.	
Silicate of Soda.....	4.08
Grains.....	107.08

Cold mineral springs are also found near by, the waters of one being especially effervescent and sparkling. Soda, iron and sulphur seem to be present in these. The medicinal properties of all the Idaho Springs waters are very marked. The sensation produced by a plunge in the great swimming baths is simply delightful, and for rheumatic affections has proved wonderfully efficacious.

There are numerous resorts close at hand where all can spend hours or months of pleasure. Pleasant drives lead to half a dozen picturesque mining

camps; winding trails extend to the summits of adjacent mountains, and secured highways for the pedestrian penetrate nature's wildest nooks. The Beebe House is a good, comfortable mountain hotel; transient rates, \$3 per day. Livery is abundant at same rates as at Central. Good deer hunting in the mountains within half a day's ride. Trout-fishing in Fall river, 3 miles.

An additional commodious and well-appointed hotel is soon to be erected. A valuable feature of this will be the introduction of the hot soda water direct from the springs into a large proportion of the rooms by means of iron pipes. Facilities for hot and cold water bathing will be supplied separately from each chamber, and the invalid can enjoy all the comforts of an elegant home, together with the finest mineral baths, without leaving his rooms. An exhilarating atmosphere and healing waters; in the midst of noble pines and enchanting scenery; fishing, hunting, riding and exploring; an ever-fruitful field for the exercise of the mind in the mining, milling and railway enterprises — these, together with an easy accessibility, are a few of the attributes which in the future will render Idaho Springs one of the most popular of Rocky mountain resorts.

"Old Man of the Mountains."—Again taking passage on the narrow gauge, and speeding up the valley to Fall river, $2\frac{1}{2}$ miles, we passed at the very base of this noted landmark, and all were out for a view. It consists of an excellent profile of a man's head, chiseled by nature out of the rocks, four or five hundred feet above the track. Across the creek is the Fall River House, also quite a stopping place for pleasure travel. Fall river enters Clear creek just below, bearing in its sparkling waters a suggestion of the speckled beauties to be found a mile or two above.

Every foot of the road continued to present some new and interesting feature, some glorious and unrivaled view of snowy peak, or nearer glimpse of rushing creek and shaded valley. We kept close to the water's edge, and passed some pretty falls of man's construction, and occasionally saw the miners at work among the golden sands. Quartz mining enterprises are not wanting. We had entered the "silver belt," however, and found the mountains much more precipitous than in the gold region — hence more interesting to the seeker of wonders.

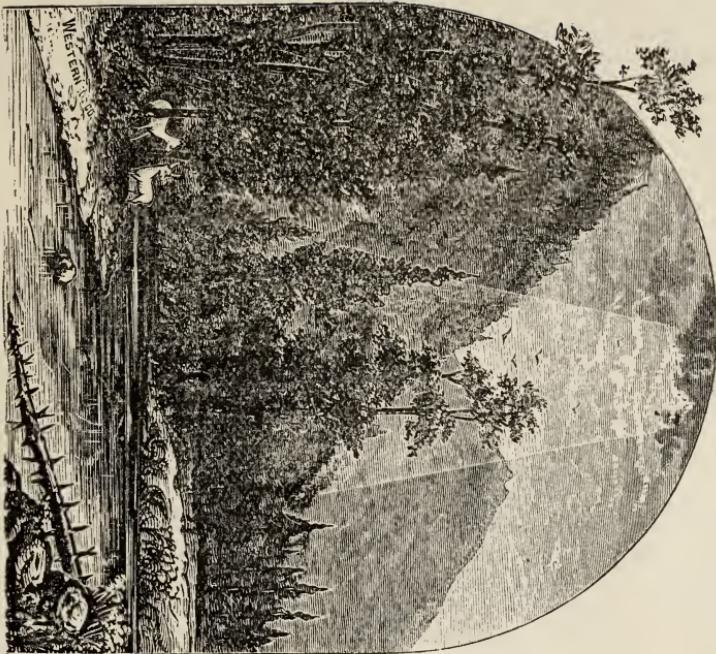
Georgetown—well named the "Silver Queen"—is distant from Denver 52 miles, close under the "Snowy Range," at an altitude of 8,412 feet. The valley here is nearly a mile wide, reasonably level, and the mountains rise up rugged and abrupt on three sides to a height of nearly 2,000 feet. Two branches of the stream come leaping down through the streets from either side, and the visitor may expect to see the handsomest city in the Rockies—none could be more eligibly located and few have made better use of natural charms. The city has a population of 5,000—all directly or indirectly interested in mining. You see silver bricks at the banks and smelters, you stumble over huge masses of silver ore at your hotel and on the street corners, and go where you will the windows and counters are lined with specimens of the glittering mineral. The inhabitants are fairly charged with mining enthusiasm and confidence in their town. If you are incredulous at their kindly offered information why *there are the bricks!* Georgetown has enjoyed a marvelous degree of prosperity. The splendid business houses, schools, residences, water works and smelting works are living monuments. The town is literally surrounded with mountains of

silver ore, and much of it is of such grade that it has been shipped to Europe for treatment and the bullion returned to America with handsome margin for profit. The railway era has added new faith and prosperity. Ores are now shipped in great quantity to Black Hawk, Denver, Golden, Omaha and across the ocean, which a few years ago were valueless on account of the great cost of transportation. The silver belt here is about 12 miles wide by 20 long.

According to Raymond and other reliable authorities, the gold and silver mines of this county (Clear Creek) have produced \$14,000,000. The "Dives Pelican" mine has been the largest producer, having yielded \$3,000,000. Its largest yield for one week was \$65,000 in 1874. The "Terrible" has produced its hundreds of thousands, and among others well worth a visit are the "Colorado Central," "East Roe" and "Equator." All are high up the mountain sides but will well repay the climb.

Neighborhood Attractions.—Georgetown is unrivaled for the multiplicity, beauty and interest of attractions for the visitor. Green Lake, $2\frac{1}{2}$ miles, is a sheet possessing rare charms for all. It is half a mile long by a quarter wide, hemmed in by high mountains and pine forests. Fine boats are furnished and in a row across the water the visitor can see the wonderful forest of petrified trees standing upright many feet beneath the surface, with thousands of trout swimming among the branches. The lake has been stocked with 40,000 California salmon, 20,000 trout and 200,000 fish of other varieties. Thousands of California salmon are now in the hatching houses on the lake shore. Accommodations are the best to be had in the mountains. An excellent carriage road leads to Snake River Pass, 9 miles, where the novelty of resting one foot upon the Atlantic and the other on the Pacific Slope, and of picking flowers with one hand and gathering snow with the other can be enjoyed. The view of the Mount of the Holy Cross, and a wide compass of mountain peaks is from here indescribably grand. Only fifteen minutes walk from the city are those wonders, the Devil's Gate and Bridal Veil Falls. Empire, a pretty gold mining camp where \$2,000,000 have been produced, 4 miles; Brownsville, 3; Silver Plume, 2; Summit of Gray's Peak, 15; Chicago Lakes, 8, are among other especially interesting rides and drives. Good saddle ponies at \$2 to \$3 per day, and teams at \$8 to \$12. In the city the visitor should not fail to visit the banks, smelting works, and the "Miners Assay Office," where the finest mineral specimens and bullion are always on exhibition and the practical knowledge of the reduction of ores can be obtained. There are two good hotels, the Barton and American, the Barton being a model from parlor to kitchen. Board, \$3 per day.

From here the railway is in process of construction to Fair Play, South Park, 73 miles, taking in the rich silver mining camps of Silver Plume, Brownsville, Hall Valley, etc. and penetrating heavy forests of pine. It will be emphatically the "silver belt railway," as it crosses the greatest silver veins of Colorado, often passing the very mouths of the tunnels and winding among the ore piles. Its windings far up the mountains in view of Georgetown, through that wonderful gash, the Devil's Gate, and across the summits, develop the most remarkable of all railway engineering feats and will place the "Silver Belt Route" ahead of any in the land for interest to the tourist. The rapidly increasing yield of the South Park mines and large stock and lumber interests are items of coveted trade in that direction.



ON GRAND RIVER, MIDDLE PARK, CO.

REACHED VIA UNION PACIFIC RAILWAY, COLORADO CENTRAL BRANCH.

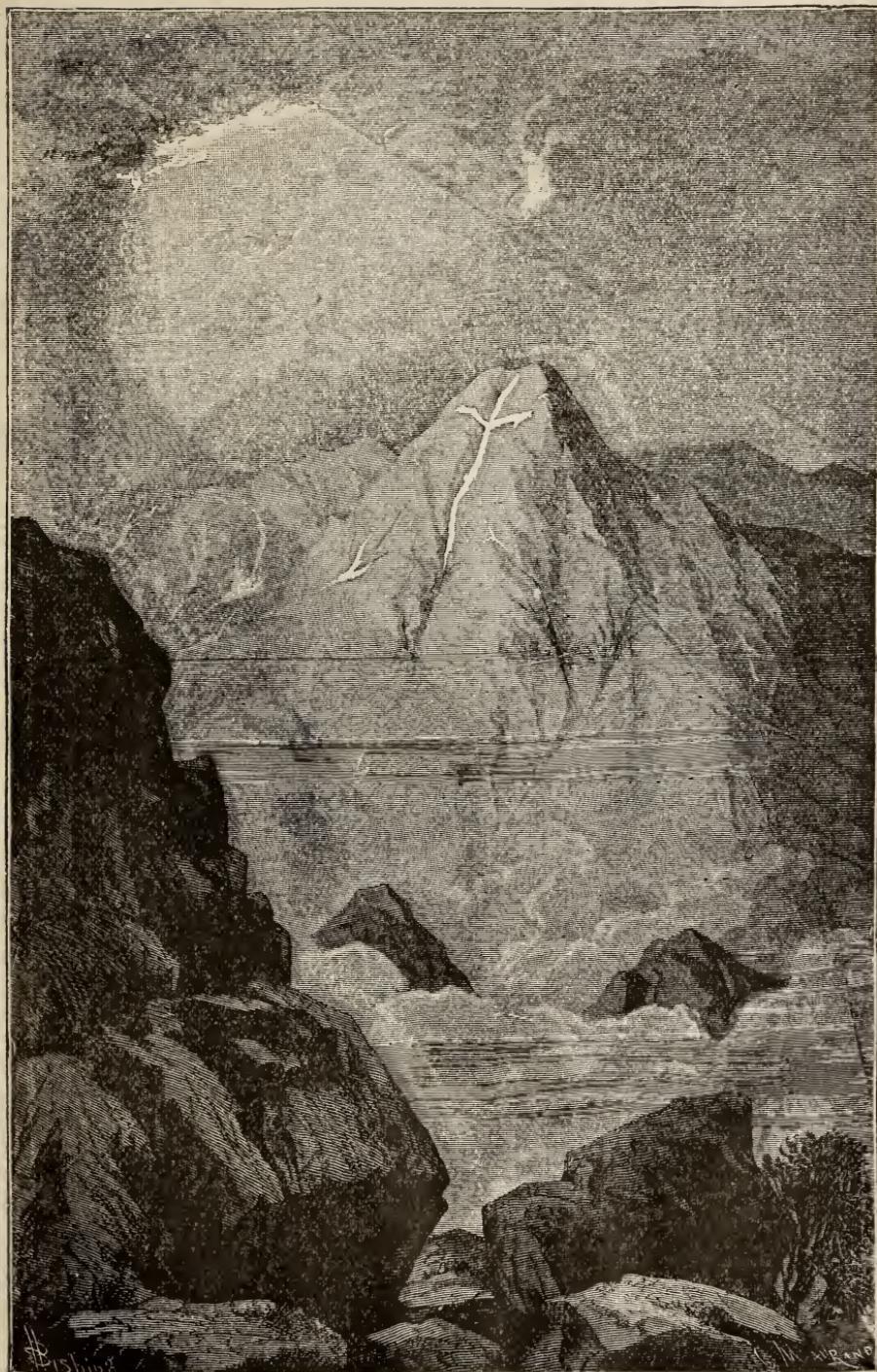


MARY'S LAKE, NEAR JAMES PEAK, CO.

Middle Park.—Of the large parks this is by far the finest in all points which constitute attractions for the health and pleasure-seekers or the sportsman, and offers many charms and advantages for those seeking homes. Its accessibility, the wildness, singularity and sublimity of its scenery; the coolness, salubrity and invigorating influences of its climate and its inviting baths; its dozens of rivers and lakes, alive with gamy trout, and its deep solitudes of mountain and forest, only broken as haunts for noble game—these alone render it a mecca to be eagerly sought, saying nothing of its myriad charms which could be elaborated in appropriate space. We went from Georgetown to Hot Springs, 46 miles, easily in a day; took a delightful plunge in the Hot Sulphur baths, had trout and venison for supper and early next morning rode to the summit of Mount Bross, near by, to get a thorough idea of the Park and surroundings. Clearly distinguishable on every side, through the transparent atmosphere, we could see the almost perfect girdle of the Park—the snowy range. Rolled up high against this are pine-covered mountains in every conceivable attitude; then in the wonderful circular basin known as the "Park," which has an area of 4,000 square miles, are the grass covered lesser elevations, which would pass for mountains almost anywhere. Nestling among these hills are the hundreds of parks in miniature, nearly every one of which sends its crystal brook toward the sea. Down through the centre of this great basin comes the sparkling, swift-flowing Grand, its course marked by as fair a valley as human eyes ever beheld, and its sheltering bluffs rising over as cosy and thrifty frontier homes as one could find anywhere. Tributary to it are a dozen streams which may well be ranked as rivers. Of course, standing like ice-clad watch-towers over this lovely scene are such mighty peaks as Mount Lincoln, Long's Peak, Gray's Peak, James Peak and others. The Park has an average elevation of 7,800 feet.

The Springs consist of a dozen or more boiling, hissing, sulphur-scented fountains spouting from the crevices of an immense rock overlooking the river and at the base of Mount Bross. The waters of several of the largest fall in one great sheet over the edge into a natural basin and form a delightful bath. The temperature is about 110°. Commodious bath houses are furnished, and hotel accommodations are very fair at \$2 to \$3 per day. Dr. Stedman, a noted physician of the west, has this to say of Hot Springs and vicinity: "For chronic cases, where it is desired to combine change of scene with medical treatment, few places in summer combine more natural attractions than the vicinity of these springs can boast. And with its magnificent river (rightly named the 'Grand'), its wooded and grassy slopes, surrounded by alternate forest-crowned hills, and abrupt, savage and rocky cliffs, while beyond and encircling all, rise the rough outlines of the 'snowy-range,' one could easily imagine that here might be the place where the waters should gush forth which 'should be for the healing of the nations.'"

Trout-fishing is good almost everywhere, especially so in the upper Grand and at Grand Lake, 25 miles distant. Grand Lake is a sheet of water of unknown depth, about two miles square, environed in frowning cliffs and fairly thronged with trout. Elk, deer, mountain sheep, bear and antelope abound, as do water-fowl, sage hens and grouse, almost everywhere. At the southeastern rim of the Park, near the lively gulch mining town of Breckenridge, bear hunting is exceptionally good. No matter what particular species one may fancy he



MOUNT OF THE HOLY CROSS—NEAR GEORGETOWN, COLORADO.

can always be accommodated there. He can meet the kindly "cinnamon" by twilight alone, or he can have half a dozen for company; he can always interview one solitary "grizzly" on that lonely path down to the village slaughter house, or, by going a roundabout course, can divide his attention among four or five when he gets there; should he desire one of the large "black" kind, so the saying goes among local hunters, he has only to lariat a tolerably small sized pony with a two-inch cable on a nice little patch of grass in the bottom of a certain gulch just above town; he may proceed to take his morning ride any time after midnight and he will find a fair representative of the black species sitting where his pony ought to be and endeavoring to spit out that two-inch cable. We indiscreetly expressed some curiosity about the bear family in the sitting room of Judge Silverthorne's popular Breckenridge hostelry one evening, and inside of ten minutes were fairly overwhelmed with invitations to attend a black bear re-union up in Negro gulch, a grizzly promenade down Zig-zag Hollow or a cinnamon breakdown over on Buffalo Flat. Breckenridge is 60 miles from Hot Springs by a good wagon road. Lakes near by abound in trout of prodigious size and appetite. Tip-top hotel and livery accommodations. Board \$2 per day.

Curiosity hunters in the Park are rewarded by the existence in great plenty of agates, petrifications, amethysts, fossils, chalcedony, etc. The luxuriant grasses are being utilized by fine herds of cattle. The owners are always hospitable and in different localities are prepared to entertain guests royally. From Georgetown to the edge of the Park, the distance is 21 miles; to the Springs, 46 miles; Tri-weekly stages; fare from Georgetown to the Springs, \$8. Good roads track the Park in most directions. Saddle ponies can be obtained at the Springs at \$1.50 to \$2 per day. Board can be obtained in all desirable localities at from \$2 to \$3 per day.

Clear Creek Cañon by Moonlight.—Returning to Georgetown we had the choice of two regular trains per day for Denver. The moon was at its full, and by taking the evening train we were afforded the most sublime ride of our lives. Imagine the effect of the pale rays of the night queen as we twisted and doubled upon our course in the depths of that mighty chasm. Sometimes the rushing waters and cañon shades were fairly flooded with the almost vertical beams; suddenly darkness was deeper than before because of our abrupt change of course under the giant battlements. Now our bands of steel gleamed like silver; in an instant all was blackness and confusion. The walls, the fissures, the noisy cataract below, the stars and pine-clad summits above seemed to dance like the figures of the kaleidoscope, so like magic was it all. Travel "by moon" here, reader, if you can, and never miss its silvery halo on either the up or down trip through Clear Creek cañon. Emerging from the Rockies at Golden, we again changed for the coaches of the main broad-gauge line, and descending eastward through the fertile Clear Creek valley soon found ourselves at the metropolis.

Denver.—Capital and commercial center of Colorado, and sooner or later the grand objective point of nine-tenths of all who visit the state. Distance from Omaha, 648 miles; altitude, 5,244 feet. The city is built on both sides of the South Platte river, fourteen miles from the foothills, commanding one of the finest panoramas of snowy range and timbered mountains in the entire west. Northward 75 miles is Long's Peak: southward the same distance, and always

in perfect view, is Pike's Peak. The view extends still beyond these, being only lost in the sombre outlines of the Black Hills, 125 miles northward, and in the Sangre de Cristo mountains, 150 miles to the south. This gives clear, unbroken sweep for the vision of nearly 300 miles, and one that furnishes an endless variety of mountain grouping, from the dark green and purple-tinged pine-lands of the lower ranges to the snowy, silvery summits of a hundred mighty peaks. Denver is a solidly built, well shaded city of 23,000 people. Evidences of refinement, wealth and remarkable enterprise greet the visitor on every hand. Long streets and avenues, thickly lined with elegant residences, beautiful shade trees, and tasty yards and gardens, stretch out in every direction from the well-built business centers. It is essentially a city of fine churches and schools, of elaborate public improvements and great private enterprises, of high social culture and an enduring thirst. Attesting its claims on health and pleasure seekers are the facts that nearly one-half of the population are reconstructed invalids and that it is the resort of thousands of America's most prominent divines, law-makers and capitalists and of the greatest travelers and nobility of Europe. P. T. Barnum has remarked in a lecture, "Why, Coloradoans are the most disappointed people I ever saw. Two-thirds of them come here to die and they *can't do it.*" John Russell Young has long since said, "Denver and Paris are the two cities with which I fell in love at first sight, and in which I have a constant yearning some time or other to reside. I have seen no prettier town in Europe or America than your same Denver." The number of arrivals at Denver hotels in 1877 was 121,000.

The growth has been one of great rapidity. Since the first railroad was completed in 1870 the population has increased from 4,000 to 23,000. Six lines of railroad, the Kansas Pacific, Colorado Central, Denver and Rio Grande, Denver Pacific, Denver, South Park and Pacific, and Denver and Boulder Valley, have been completed in these seven years, giving her direct routes to the east, draining all the valuable farming regions of the state and penetrating the heart of the richest mining centers. Her trade has reached \$20,000,000 per annum. In 1877 her eight banking institutions sold exchange to the amount of \$18,000,000 and cared for nearly \$2,500,000 of average deposits. Insurance carried, \$6,000,000; shipments of cattle, 1877, 8,140 head; value of improvements made, same year, \$350,000; manufactured articles, \$2,000,000; total amount received in post-office money-order business, \$555,000; these items will convey something of an idea of the thrift and importance of the city, commercially.

In walks about Denver, there will be especially noticed the splendid Holly water works, which send pure mountain water from the Platte all over the city at the rate of a million gallons per day; three or four lines of street railway, gas works, five fine public school buildings and a widely known ladies' seminary, twenty churches, United States branch mint, half a dozen good hotels, etc. Four daily papers, such as cities twice the size east could not boast, are published here. These are the pioneer *Rocky Mountain News*, *Denver Tribune*, *Times* and *Democrat*. In brief, Denver is the metropolis of one thousand miles of plain and mountain, the entrepot of the great Rocky Mountain gold and silver mining region, of the stock and agricultural interests of a country larger than all of the states east of Ohio combined, and the sanitarium of admiring thousands.

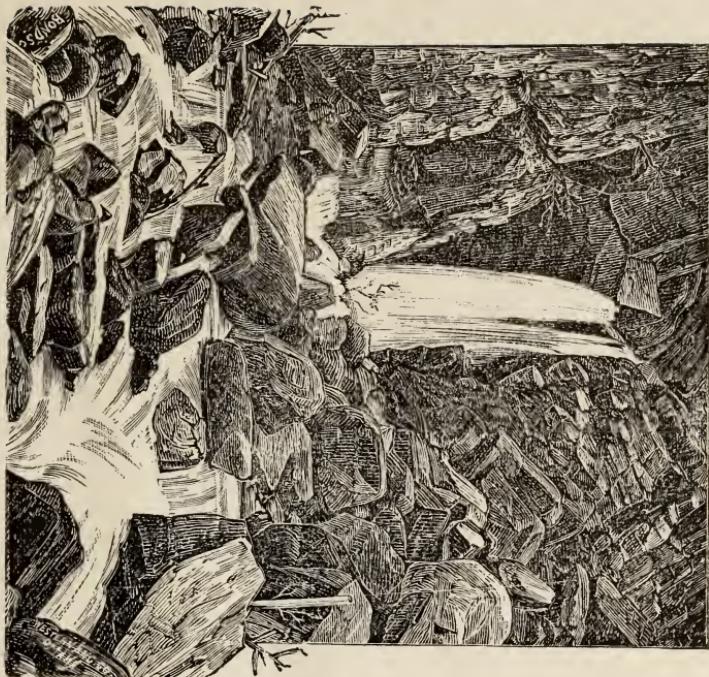
Drives over unexcelled roads radiate in all directions, each having favorite

points of view of mountain, city and plain. In the immediate neighborhood the Boulevards, Central Park, Swansea Smelting Works, Villa Park, Sloan's Lake, and the Denver trout ponds, should not be overlooked. Within a dozen miles are a variety of attractions, such as Bear Creek Canyon, Bergen Park, Mt. Vernon, Morrison Soda Springs, Soda Lakes and Church's Lake. Good duck hunting in the lakes, and trout-fishing near Morrison, in Bergen Park, and near Mt. Vernon. Hotel rates, \$2.50 to \$4.00 per day; excellent boarding houses furnish accommodations at from \$7 to \$10 per week. Venison, buffalo, antelope and bear meat, with mountain grouse and trout, are common items of hotel *cuisine*. Carriage hire, \$4 to \$7 per day; good saddle ponies can be obtained at \$2 per day. Denver has really the finest omnibus and transfer line in the western country; uniform fares, including baggage, 50 cents. Street car fares, five cents. The Colorado Central and other railways make special excursion rates for tourists, in large or small parties, to all mountain resorts. Rents for cottages are from \$20 to \$35 per month. Expenses of living about 15 per cent higher than east of the Mississippi.

SOUTHERN COLORADO AND NEW MEXICO.

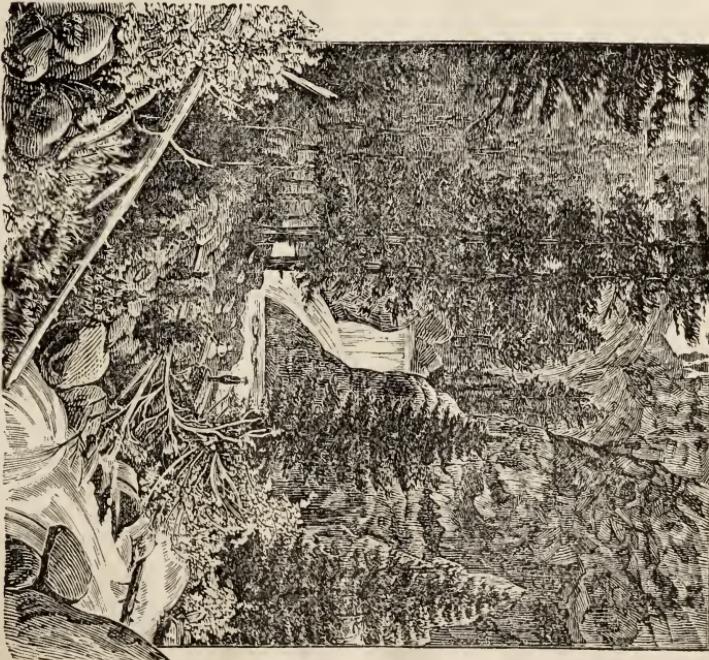
Colorado Springs and Manitou.—Prominent among the Union Pacific Railway connections and feeders in Colorado is the Denver and Rio Grande Railway (narrow gauge), leading directly southward from Denver 220 miles to the borders of New Mexico and the San Juan country, and controlling the immense freight and passenger traffic of that region. Lying near the base of Pike's Peak and 75 miles south of Denver, are Colorado Springs and Manitou, the former on the line of the railroad, and the latter 5 miles distant by carriage road. Manitou is famous all over the land as a summer resort, and indeed is becoming quite a favorite rendezvous for travelers in winter. It is situated in one of the wildest and most beautiful of mountain glens, at an altitude of 6,250 feet, possessing as the principal attraction seven noted mineral springs. These springs are named "Manitou," "Navajo," "Comanche," "Shoshone," "Arrapahoe," "Misha Tunga," and "Pawnee," all possessing valuable curative properties. Iron and soda are the prevailing constituents, and the waters from the richest are said to contain an ounce of medicated matter to every four gallons of water. Other attractions in the vicinity are "Garden of the Gods," Cañon of the Fountain, Glen Eyrie, Ute Pass and Falls, Cheyenne Mountain and Rainbow Glen. Ascents of Pike's Peak are made from here; distance to summit, air line, 8 miles. There are four hotels here, charging from \$2.50 to \$4 per day, and furnishing accommodations from the average grade up to the best obtainable at any watering place east or west. Daily stages from Manitou to Colorado Springs connect with the trains.

Pueblo.—Southward from Denver 120 miles, in the valley of the Arkansas, is Pueblo, bearing to some extent the same relation to southern Colorado that Denver does to the northern portion. It contains 5,000 inhabitants, Holly water works, rolling mills nearly completed, fine school and church privileges, and has virtually three railway lines—the Atchison, Topeka & Santa Fe, Denver & Rio Grande, and a branch of the latter road running up the Arkansas to Cañon City, 40 miles distant. 97,000 tons of freight were handled here by the different railways in 1877, and among important shipments were 13,000 head of cattle.



UTE FALLS, MANITOU, COL

REACHED VIA UNION PACIFIC RAILWAY, COLORADO CENTRAL BRANCH.



BOULDER FALLS, BOULDER CANON, COL

The branch railway line to Cañon City opens up a rich agricultural and mineral region, and attracts considerable trade and travel from the southern and western counties of Colorado. Near Cañon City are extensive deposits of coal, from which were taken 53,000 tons of excellent fuel in 1877. At Cañon City are warm and cold soda springs of considerable merit, and just above town is the entrance to the

Grand Cañon of the Arkansas.—This is a gash of remarkable beauty and magnificence, the walls rising almost perpendicularly from the water's edge to the height of 1,500 to 2,000 feet. The climate is one of the most equable and pleasant, the year round, to be found in Colorado. Summer and fall often extend far into the winter, while fruits and flowers which are too delicate for northern sections of the state flourish in the open air. Trout are plentiful within easy walk, and large game ditto within a day's ride. Westward 25 miles are the Rosita gold and silver mines, now yielding at the rate of \$250,000 per year. Daily stages thither. Rich copper ore and paying oil wells are found near Cañon. The Colorado State penitentiary is located here.

New Mexico.—This great territory, with an area of 121,000 square miles, and a population of 100,000 souls, has been rendered tributary to the Rio Grande Railway by the extension of the line southward from Pueblo 86 miles, to El Moro. The importance of its trade can be in a measure imagined from the facts that as many as 1,000,000 sheep have been sent to market per annum from its boundless pastures, 10,000,000 pounds of wool clipped, and that one silver mine produces a ton of base bullion per week, and a copper mine, with the rudest appliances, turns out 3,000 pounds of pure copper per week. The freight shipped and received by the Rio Grande Railway at El Moro from this great southern country in 1877 amounted to 42,971,582 pounds. The territory possesses a delightful climate. Vast areas of rich mining country, and millions of acres of unsurpassed grazing and agricultural lands are yet unoccupied. Southward only a few hundred miles are the rich and populous states of northern Mexico—the land of the orange and grape—soon to be pouring their wealth of mines, pastures and vineyards northward over this highway, and eastward via Omaha and Chicago. Daily stages run between El Moro and Santa Fé. Distance 205 miles.

The main line of the Denver & Rio Grande continues its course southward from Pueblo 100 miles to the eastern edge of San Luis Valley, and for the present makes its terminus Garland City. This is the real gateway to the San Juan mines, and is the point where freights are transferred, and travel seeks the stage coach. The road only reached this point in August, 1877, but for the five months ending December 31, 1877, freights forwarded and received at the Garland depot reached the handsome figures of 12,944,153 pounds. Veta Pasc, just east of Garland, over which the railway is laid, is unsurpassed for the magnificence of its scenery. Railway engineering here has surmounted wonderful difficulties, and affords the tourist a constant view of its most brilliant achievements.

“THE SAN JUAN REGION”

is the title generally applied to the extensive and marvelously rich silver mining country in southwestern Colorado. It comprises the counties of La Plata, Hinsdale, San Juan, Ouray, and portions of Rio Grande, Conejos and Saguache, and

covers the princely area of 14,000 square miles. The discoveries generally are confined to great altitudes and unusually rugged mountains. Before the era of roads some of the miners carried small lots of the rich ore out over the snowy summits, a dozen miles, on their backs, and rendered their avocation profitable at that. The great first work has been to render the region accessible by constructing good wagon roads. This accomplished to a large extent—with the near approach of the Denver & Rio Grande Railway—and the progress has been noteworthy, even in this fast age. Towns have sprung up as if by magic. What was a wilderness of almost inaccessible mountains, 300 miles from railway two years ago, is echoing with the din of some sixteen quartz mills and smelters. Nearly 10,000 mines have been discovered and located. Large areas of choice agricultural, grazing and timber lands have been thrown open to settlement. The number of sheep now in this region is estimated at 400,000 head, and the wool clip for 1877 at 800,000 pounds. Base bullion to the amount of 900 tons, worth from \$280 to \$350 per ton, was sent out over the Rio Grande road during the past summer. The freight business was also immense, about 5,000,000 pounds of supplies, mining machinery, etc., having been hauled in over the different routes last season.

The Principal Districts are Summit, Animas, Eureka, Uncompahgre, Lake, Galena, Park and Decatur. These lie along the San Juan river and its many tributaries and along the tributaries of the Grand on the western slope, and at the headwaters of the Rio Grande on the eastern slope. The best developed and richest mines thus far worked are the "Bonanza," "Saxon" and "Alaska," in Uncompahgre District; the "North Star," "Empire," "Grey Eagle" and "Aspen," Animas; "Mountain Queen," "Mammoth and Red Cloud" and "Maid of the Mist," Eureka; "Young America" and "Dolly Varden," Galena; "Ute and Ule" and "Hotchkiss," Lake. Ores from these yield \$100 to \$2,000 per ton. Specimens of nearly pure silver have been taken from the "North Star," in Animas District, while the "Mountain Queen," in Eureka District, has a large vein yielding 75 per cent lead and 50 ounces silver per ton. The mines of Summit District are all gold-bearing, and are literally "quarries of free gold ores," the receipts from the "Little Annie" having been as high as \$4,000 in gold per week.

Towns and Camps.—Following are the principal towns, with their altitude, population, name of county and distance from Garland, at the terminus of the Denver & Rio Grande Railway. There are many small camps, the entire population being estimated at 10,000. Good mountain roads connect all camps with Garland:

Town or Camp.	Distance.	Altitude.	County.	Population.
Del Norte	65	7,807	Rio Grande	2,500
Lake City	145	8,550	Hinsdale	1,500
Silverton	185	9,400	La Plata	1,000
Ouray	223	7,300	San Juan	800
Crooke City	147	8,600	Hinsdale	500
Capital City	150	9,500	Hinsdale	400
Howardsville	165	9,700	San Juan	100
Eureka	176	9,900	San Juan	100
Animas Forks	172	11,000	San Juan	100
				7,000

Scenery, Rates, Distances, etc.—As San Juan is by far the most rugged and mountainous section of Colorado, traversed by numberless streams and abounding in parks and lakes, it may be imagined that the scenery is superlatively grand. There are hot springs at Wagon Wheel Gap, 30 miles above Del Norte, and at other points on regular stage lines. Fishing is tip-top in the Rio Grande and other streams. Game is exceedingly plentiful away from the camps. Large crops of grain and vegetables are produced in Saguache and Animas valleys, and dairying is largely carried on at great profit. The market for all produce is unexcelled. Barlow & Sanderson's daily stages run from Garland to Del Norte, Lake City, Silverton, and all other prominent points; fares: Denver to Del Norte, \$22; Denver to Lake City, \$37. Hotels at all towns and camps; rates: \$2.50 to \$3.50. Ruter's Concord coaches also leave Garland every other day for Costilla, Red River Settlement, Taos and Santa Fé. Distance to Santa Fé, 155 miles; fare, \$25. The famous Ojo Caliente hot springs are 20 miles west of Taos, and a side stage line will carry passengers over during the coming season. At Garland prices of produce are: flour, \$3.75 per cwt.; potatoes, \$2; corn, \$1.65; oats, \$1.85; butter, 35 cents per pound

CHAPTER IV.

WESTWARD TO UTAH—LARAMIE PLAINS AND NORTH PARK —CAMPING OUT—NOTES FOR THE TOURIST.

Returning to Cheyenne over the Colorado Central, and resuming our journey westward on the great trans-continental line, we soon crossed the main range of the Rocky Mountains at Sherman—549 miles from Omaha, at an elevation of 8,242 feet—and looked down upon that vast grassy amphitheater, the Laramie Plains. On a perfectly clear day the view from some of the slopes overlooking this basin is grand beyond description. The hundreds of square miles of pasture lands and arable valleys lie in full view. Through the center the course of the noble Laramie river is plainly traced by its broad bands of rich, green meadows, its groves of cottonwood, and at frequent intervals its own shining bosom. Twenty-five miles distant the black clouds of smoke of fair Laramie City mingle with the bluest of ether, and, by the aid of a good glass, one can trace the rows of brick blocks, the machine shops and rolling mills of the thriving entrepot there built up under the stimulating influence of the Union Pacific Railway. To the west rise the white peaks of the Medicine Bow range. Southward are the clear-cut, sharp-pointed Diamond Peaks, the Black Hills swinging around on the northern side, and with the main range forming a perfect girdle and shelter. Dark pine forests lie against the horizon almost everywhere.

The Laramie Plains contain nearly 3,000,000 acres of unsurpassed winter and summer grazing lands. The average elevation is 7,150 feet. Over 50,000 head of stock are grazing in this region, and many of the finest ranch sites are still to be had for the simple taking. The railroad company has also choice tracts

of agricultural lands along the principal streams, which can be obtained in the same manner as the Nebraska lands. Wheat, rye, oats and barley have been experimented with here, and are found to yield bountifully by irrigation. The population is estimated at 8,000. The principal streams are the Big and Little Laramie rivers, Rock Creek, Deer Creek, Medicine Bow river and Cooper Creek, all tributaries of the North Platte river. It was in the extreme northern edge of these plains that General Reynolds, of the United States Army, wintered with a few followers in 1860. His expedition had made hard marches all summer, and when winter set in the animals were turned out to seek their own living, all thoroughly broken down, poor and unfit for use. In the spring these horses, with one exception, were fat and in perfect condition to commence their season's work. Reporting upon this, the General said: "This fact, that 70 exhausted animals, turned out to winter on the plains the 1st of November, came out in the spring in the best condition, and with the loss of but one of the number, is the most forcible commentary I can make of the quality of the grass and the character of the winter."

Sheep Raising.—The climate and grasses are especially adapted to sheep raising. Some 35,000 head of sheep are now grazing in different sections, and their owners claim a profit, one year with another, of 25 to 35 per cent on the capital invested. Feed is only required during a few days of winter, the average not being a month in the whole year, and only hay is used. This is cut at slight expense on the meadow lands along creek bottoms. Mexican sheep cost \$2 to \$2.25 per head, and are rapidly graded up by the infusion of better blood—Merino bucks generally being used. To commence with, a herd of 1,000 sheep—which is about the average number started with—will require an investment of \$4,000, as follows: 1,000 Mexican sheep, \$2,000; 20 Merino rams, \$300; corrals, cabin, etc., \$500; leaving \$1,200 for carrying on the herd until some income from the flock is obtained. Herders cost \$25 per month and board. The wool of graded sheep will pay all expenses of the flock—that is, after one cross of the Merino with the Mexican. The increase will average 80 per cent. In flocks of 1,000 the total expense of keeping will average 60 cents per head per year, under economical management. Mutton lambs sell at \$2.50 to \$3; mutton sheep, \$2.50 to \$2.75; wool, 18 to 20 cents per pound. The Mexican sheep yields 2 pounds at a clip; first cross with Merino, 3 pounds; second cross, 4 pounds, the wool increasing in value about 2 cents per pound with each cross.

To double the capital in three years is a very common result, and this has been accomplished in two years, with especial good management. All sheep brought from the south yield a larger quantity and finer grade of wool after the first year—a fact partly due to the superiority of the grasses here and partly to the unvarying cool and equable temperature of these high altitudes. One breeder figures up his business for a term of five years in this wise: Increase from 1,000 ewes, 75 per cent annually, 7,823, worth \$2.25 per head, or \$17,601.75. Value of wool, at 20 cents per pound, \$4,829.20. Aggregate in five years, without including the value of the original band, \$22,430.95. His average expense of keeping was only 50 cents per head per annum, or \$6,411.50. Net profit for the five years' operations, \$16,019.45. This result, large as it may seem, was obtained by breeding only Mexican sheep. Under the improved system of grading up the sheep and thus securing more and finer wool and a larger animal for mutton, a difference of \$7,342.30 is shown, and the ranch-

man who raises the better herd and clips the finer fleece exhibits a clear profit of \$23,361.75 from his investment of \$4,000 and his five years' work.

The pastures are boundless; consumption always keeps pace with production, and these experiences can be duplicated by thousands of ranchmen along the grand old mountains and among the grassy foothills.

Dairying.—Quite a number of the most intelligent ranchmen are turning their attention solely to the production of butter and to marketing milk at Laramie. While the latter branch of the business might easily be overdone, it is self-evident that the manufacture of butter and cheese can never be. No climate in the world can excel this for dairying. The cool, pure atmosphere, the crystal stream, the wonderfully sweet and nutritious grasses are auxiliaries which no eastern producer can ever hope to enjoy to such an extent as does the Wyoming dairyman. Feed of the choicest kind costs nothing, the simple cabin in the mountain glen has thus far been the milk house, and the market is at hand in the mines, in the lumbering camps and at the railway. Wyoming produces only one-third of the butter consumed, the balance being shipped from distant states. Home-made or ranch butter always sells from 5 to 10 cents per pound higher than the eastern article and is always eagerly sought for by first-class hotels and the better class of citizens. Dairy cows sell readily for \$40 per head here; best grades of butter at from 30 to 40 cents per pound.

Laramie City.—In the midst of these plains, and on the south side of Laramie river, is the city of the same name. It is distant from Omaha 572 miles; altitude 7,123 feet. It contains a population of 3,500 souls and is not only the "Gem of the Laramie Plains," but of all Wyoming, for beauty of location, finely laid out streets and pleasant homes. Laramie is only a fair example of what industry and thrift railroads can create in a wilderness and of what the Pacific Railway has done for two thousand miles of country which would yet be utilized only by the savage and wild beasts but for its civilizing influence. The only rolling mills in operation between the Missouri river and the Pacific coast are located here. These were built by the Union Pacific company in 1875, at a cost of \$250,000, and have a capacity of 20,000 tons of railroad iron per annum. Two hundred men are employed. As this is the end of a regular division of the road the company has also extensive machine shops and a round house here. A large number of men are employed in these, and the amounts disbursed here and at the rolling mills monthly put many thousand dollars into home circulation. The river contains a sufficient volume of water to furnish splendid water-power. Enterprises looking to the manufacturing of iron from the vast deposits of ore near the city, and for utilizing the great soda deposits, also located here, are already freely talked of. Woollen mills are also greatly needed. It is well known that gold, silver, copper, lead, plumbago, iron, antimony, red hematite iron, brown hematite specular iron, sulphate of soda, gypsum, marble and cinnabar, are found within a radius of 30 miles of the city, in such quantity that they can be readily utilized with a reasonable outlay of capital.

Freight is received at the Laramie depot to the amount of nearly 20,000,000 pounds per annum. Another item showing the thrift and traffic of the place is the post-office money-order business. During the fiscal year ending June 30, 1877, money orders were sold to the amount of \$56,237.84. A fine system of water-works sends pure spring water through the streets and into the houses.

A Catholic hospital and convent are located here. From Laramie there is tri-weekly mail service to Hans Peak gold mines, 112 miles; to White River Agency, Colorado, 228 miles; weekly to Fort Laramie, 85 miles, and weekly to Centennial and Last Chance mines, 30 and 40 miles respectively.

Mining.—The principal gold and silver mining districts tributary to Laramie City, are Rock Creek, Centennial, Sheep Mountain, Big Laramie, Douglass Creek or Last Chance, and the North Park districts. Rock Creek is composed of placer mining claims, forty miles northwesterly from Laramie, which were only discovered a year ago, and which promise well. Work with the hydraulic is already progressing. The Centennial district, thirty miles west of Laramie, by an excellent wagon road, was opened in 1876, one quartz claim yielding \$20,000 in gold that year. Several large deposits yielding as high as \$100 to the ton of ore have been discovered, but are only partially developed. Sheep Mountain district is near Centennial, and is noted for its rich silver ores. Assays from different mines at depths from 80 feet downward have run as high as 2,000 ounces of silver to the ton. Thirty miles south of Laramie is the Big Laramie Quartz and Placer Mining District, in which both gold and silver mines of undoubted great value have been discovered. Large deposits of copper, assaying \$110 per ton, are also found in this district. Southwesterly from the city forty miles is the Last Chance District, containing rich gold quartz and placer mines. "Pay-dirt" has been found in over a dozen of the lodes from the "grass roots" down. Four companies are operating these mines with gratifying success; over 300 tons of ore, assaying \$300 per ton, now lying at the mouth of one mine awaiting the advent of quartz mills. These districts, it should be remembered, are on the outskirts of an extensive unprospected mineral-bearing region.

On the borders of North Park, sixty miles south of Laramie, rich discoveries have recently been made of gulch mines, auriferous quartz, and ruby silver. We have seen beautiful nuggets from gulches in this vicinity, and the quartz mines bid fair to equal those of the very best districts of Colorado. Still farther southward—from 100 to 125 miles, and over the borders of Colorado—are the noted Rabbit Ear Silver Mines and the Hans Peak Placer Mines, which, during the seasons of 1876-'7, attracted widespread attention on account of their richness and extent of deposit. Specimens from the "Grand Lake" and other mines, slightly roasted, show globules of pure native silver. The Hans Peak placer mines have been sufficiently developed to establish the fact that they are the most extensive of all new districts in the Rocky mountains. Mining experts from San Francisco, Arizona and elsewhere, pronounce the wealth of one bar ("Poverty Hill"), which has been thoroughly prospected, at nothing less than millions. This bar covers 250 acres, and is being thoroughly opened up by means of flumes and the hydraulic. Hans Peak rises grand and grim over the different camps to an altitude of 11,000 feet, and, as wonderfully rich specimens of quartz are sometimes picked up in the gulches below, it is generally believed that this immense deposit of placer gold has been washed down from some giant fissure vein of the mountain.

All of these districts are rendered tributary to Laramie by good wagon roads. Of themselves they will build up a large city of quartz mills, smelters and sampling works, for the wealth is uncovered, and Yankee enterprise will soon step in and throw it into the channels of trade in the form of bullion.

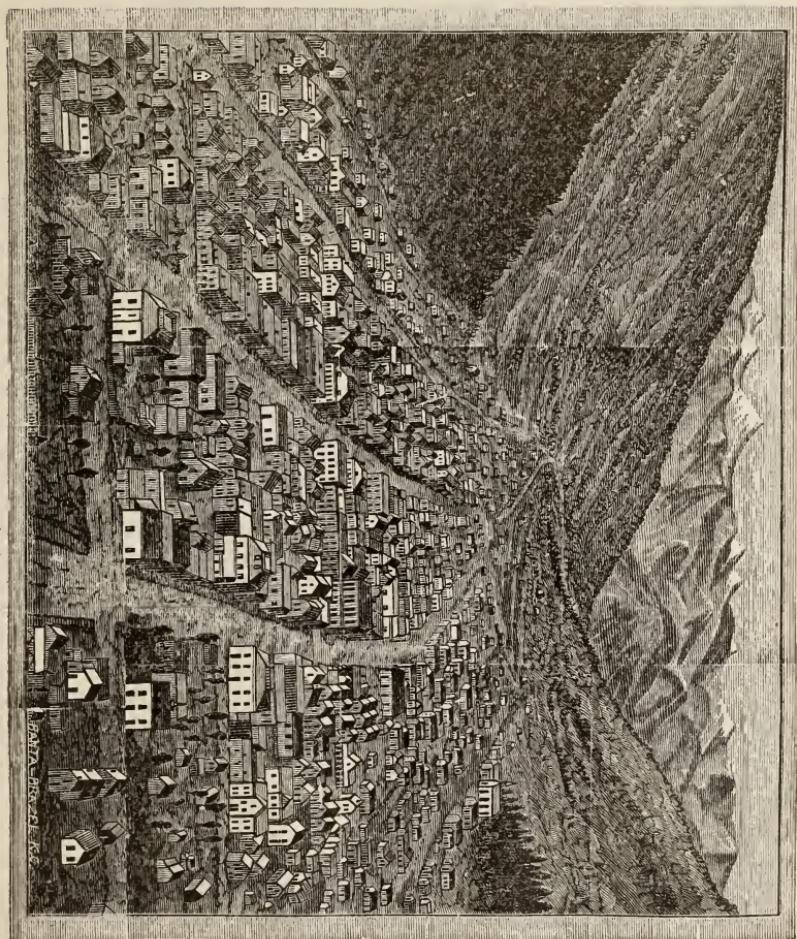
These vast fields offer great inducements to capital, large or small, and should not be passed unnoticed.

One of the largest and richest deposits of iron ore in the United States is found 25 miles north of Laramie, near the head of Clugwater Creek. The ore is described by Hayden as a black, crystalline magnetic, yielding 68 per cent of iron, and the deposit is simply a vast mountain literally inexhaustible. The ore is naturally located much like that in the Lake Superior region, but thousands of tons have been washed down into the valley.

Soda, Marble and Lumber.—Eleven miles southwest of Laramie are located the famous soda lakes, which have attracted so much attention from scientific men and others. They exceed 100 acres in area, and contain solid beds of crystallized sulphate of soda, about nine feet thick. Upon cutting out a mass of this soda, the springs from the bottom immediately fill the vacuum, and in a few days have crystallized the same amount and quality of material as that removed. Thus the product is inexhaustible. It is estimated that these lakes now contain 50,000,000 cubic feet of chemically pure crystallized sulphate of soda. Soda is most valuable in the form of a carbonate, and the process of converting this into carbonate of soda is very simple, and comparatively inexpensive. Soda is consumed in the United States to the amount of 250,000,000 pounds a year, costing \$7,000,000; and this is all imported from foreign lands. These lakes would supply American consumption for years to come, and in them Laramie undoubtedly possesses a vast mine of wealth.

The only marble yet discovered in the western country of real value, so far as we know, is the deposit owned by the Wyoming Marble Company, and located 25 miles north of Laramie City, 12 miles from the line of the Union Pacific railroad. The ledge is 80 feet wide, has been traced for ten miles on its surface, and prospected to a depth of 100 feet without reaching bottom. Specimens of the marble have been worked and tested by prominent dealers in this material in Chicago, St. Louis and other cities, and pronounced equal to the best Vermont marble for monumental and other purposes. A St. Louis importer says it "cuts as nice and clean as statuary marble." There is enough of it to build the state-houses and government buildings of the Union for all time to come.

The lumber interest at Laramie is worthy of note. The heavy forests noticed in the mountains from 30 to 40 miles south of the city are producing an average of 2,000,000 feet of lumber, 2,000,000 shingles, 500,000 lath, and 300,000 railroad ties and large quantities of fencing annually. Large mills are busily at work in the forests sawing out the lumber, while many teams find employment in hauling it to the track. Ties and fencing are floated down the various streams during high water season—spring and summer. Tie Siding, Rock Creek, Medicine Bow and other railroad stations on either side are shipping points for much of this product. Half a dozen companies, employing from 25 to 50 men each, are engaged in this industry. Professional lumbermen from Maine are here often employed. They get from \$4 to \$5 per day, while ordinary laborers and mill hands receive \$30 to \$40 per month and board. Rough lumber sells at an average of \$22 per 1,000 feet; finishing lumber, \$38 per 1,000 feet. The common mountain pine furnishes the principal lumber supply. It is as white as the eastern pine, almost as hard as the best spruce, and is nearly identical with the Norway pine in size and appearance. Although containing more knots, it is finer-



GEORGETOWN, COLORADO.

AMERICAN ENCYCLOPEDIA

1873

THE BARTON PUBLISHING CO.

grained, more dense and elastic, and takes a much more beautiful finish than the pine growing in low altitudes east. All lumbermen pronounce it better for wear or outside work, and it has almost supplanted eastern finishing lumber in these western cities. Wherever there are mountains we also find the pine. Wyoming is estimated to contain 15,000,000 acres of these superior forest lands. From these have been cut 7,000,000 railroad ties, 50,000,000 feet of lumber, and incalculable quantities of telegraph poles, fencing, etc., since the advent of the Union Pacific Railway, ten years ago. But the best forests are scarcely touched, and the market is nothing compared to what it will be as other resources become thoroughly developed.

Hunting in North Park.—We saw antelope in herds along the track, almost in sight of Laramie, and found the mountains within twenty miles of the city full of all kinds of large animals native to this region. But North Park, which is only 60 miles distant, is a very paradise for game, and in the writer's estimation surpasses any other section on the continent of equal accessibility in this particular. We mounted broncos at Laramie, took a couple pack animals laden with only the barest necessities, and had a royal ten days' hunt in the North Park country. The wagon road thither passes through a region which would itself be called superb hunting ground almost anywhere, and we must confess that our success from the very outset scarcely justified a trip to the Park. Elk, mountain bison, deer, antelope, bears, Rocky Mountain lions, mountain sheep, beavers, sage hens, grouse, geese, ducks, etc., have always made North Park an ideal hunting ground by their unusual numbers, and one which is becoming rapidly appreciated by western sportsmen. This great park is 80 miles long by 50 wide, has an elevation of about 8,500 feet above sea level, and is surrounded by snowy mountains from 13,000 to 14,500 feet high. Below the line of perpetual snow—about 12,000 feet—the mountains are covered with dense forests; some of the spurs jutting far out into the Park are also well timbered. Three forks of the North Platte and numerous tributaries water this area more thoroughly than are any of the other mountain parks.

We can truthfully assert that we here saw antelope in herds by the thousand, and deer and elk by the hundred. While lying in camp during the day we had antelope tempt us by interviewing us at 50 yards or less, and at night had our ponies in perpetual uproar on account of the loud splashing of playful beavers in the streams. Game is hauled from North Park by the wagon load whenever a hunting party does enter its sylvan precincts. Here the tourist can find solitude to his heart's content, the sportsman can find game with little appreciation of fear, and the health-seeker can dream away days in utter independence. Large springs of mineral waters are found in various localities. One of these boils up with great force from a cavity four feet in diameter, and that may be bottomless for aught we know. It is cold, strongly impregnated with iron, and really pleasant to the taste, but an analysis of the waters, found on the unblacked side of an old boot-leg near by, rather stuns us. We give it without remark, signature and all:

" Blue Lick.....	36
Cherry Pectoral.....	14
Scrap iron.....	40
Drake's Plantation Bitters.....	5
Paregoric.....	3
Laughing gas.....	2
F. V. Hayden.....	a trace
Brimstone.....	a trace
 Total.....	100
(Signed)	U. S. GEOLOGICAL SURVEY."

We may soon see here large herds of cattle, where the visitor will now look in vain for a single hoof. Old hunters and trappers tell us that stock has wintered in the Park with but slight loss; and with the thousands of acres of waist-high grass for hay, ranchmen should certainly be able to fortify themselves against the severest storms. We find as many strange freaks in the vegetable kingdom here as elsewhere in the Rocky Mountains. Morning after morning in midsummer have we shaken the thick, crisp scales of white frost from our blankets, and looked sorrowfully around upon a scene of apparent desolation. Brilliant flowers of the evening before were a mass of wilted ruins and the splendid tall bluegrass, that looked a delicious morsel for stock at sunset, was bent and sometimes broken with its weight of a night's winter. But an hour of sunshine always changed the scene to one of springtime freshness, and often the flora seeming the most delicate rallies first under its magic influence. Scarcely a week passes without heavy frost, yet, strange as it may appear, flowers bloom throughout the season, and strawberries ripen even to the height of 10,000 feet above the sea, and in close proximity to the eternal snows. In Switzerland the regions of perpetual snow begin at 6,500 feet above the sea; here at 11,000 to 12,000. The head of the Park is two miles higher than Boston, and the air is remarkable for its "lightness." Heart and pulse beat free and fast, and the whole system seems charged with a healthy stimulus.

Camping Out.—A trip to North Park of course necessitates camping out, and its many grassy, sheltered nooks, its beautiful brooks and springs, and the abundance of timber, combine to render it the place of all others for such enjoyable experience. Outfitting should be done at Laramie. If the party consists of four or more, buy a double team (or hire one if the trip is to be made quickly) and canvas covered wagon. The cost, if these are purchased, will be from \$250 to \$400. If properly cared for they can be sold on the return for nearly as much as they originally cost. A tent can be dispensed with if there are no ladies in the party, as the rougher sex can sleep in or under the wagon. It never pays to stint on bedding—the nights are emphatically cool. If the tent is required it will cost \$20, and can also be sold on returning. A sheet iron camp stove, skillets, coffee pot, and tin cup, plate, knife, fork and spoon for each person, with butcher knives and axes, are the necessary items for the backwoods kitchen. For a period of one month a party of four should have the following eatables: 20 pounds of breakfast bacon, 20 pounds ham, 50 pounds crackers, 75 pounds flour, 50 pounds potatoes, 1 dozen cans condensed milk, 30 pounds sugar, 10 pounds salt, 2 cans pepper, 2 pounds candles, 5 boxes matches, 2 pounds yeast powder, 10 pounds onions, 10 pounds roasted coffee, 20 pounds corn meal, 20 pounds navy beans, 3 pounds tea, 5 pounds lard, or equivalent in salt pork. Some of these items may look large, but it is safe to calculate on all appetites

doubling inside of forty-eight hours from the start. This is what might be termed "comfortable camping out." The cost of the entire outfit, including probable loss on team and tent will reach about \$120, or \$30 per man. A wagon and team, with driver, could be hired by the week at from \$5 to \$7 per day. Board at Laramie, \$4 per day. August, September and October are the best months for a jaunt of this kind.

Among other resorts near Laramie City are Dale Creek, the upper Cache la Poudre and Sand Creek, all within a day's drive. In the stream first named trout fishing is good, and Sand Creek waters one of the most picturesque valleys imaginable. Its high, rocky walls, its interminable windings, and its grassy banks, present pictures we can never forget. It rises among the mountains which form the southern boundary of the Laramie plains, flows northward to within ten miles of the city, and empties into the Laramie river. We camped one night at the first available point, without regard to Nature's attractions. A broad ledge of smooth, flat granite there formed the creek-bed, and above that, on one side, another, wide enough for a dancing-floor, served for our table (one corner of it, at least). Just below, the breadth of thick, tall grass reminded us of a Kentucky meadow; while fifty yards above was a foaming cataract, which, after leaping from a rocky basin thirty feet in diameter, dashed its crystal body into an abyss over which we easily leaped. Then for an instant the stream was lost to view under a natural bridge, composed of one solid block of granite some twenty-five feet square, and weighing thousands of tons. Wherever there was room between the immense slabs of rock, graceful clumps of willows nodded affectionately over the stream, and often a huge wide-branching cottonwood flung grateful shade over all. Bordering the valley were high battlements of red limestone, so unbroken and perpendicular that we were obliged to travel several miles down stream to find an opening for our saddle-horses. Standing out in lonely grandeur, high above all the rest, was one mass which closely resembled the ancient ruins we often see pictured, and which, if properly stationed on one of Britain's isles, would answer well for the remains of an old-time castle. We had rare antelope hunting near here.

North Platte River.—At Fort Steele, 695 miles from Omaha, the railway for the second time crosses the North Platte. It is here really a "mountain stream," as it sweeps down freshly from the snowy ranges of the south. It is clear, deep and cold, and flows over a gravelly bed, contrasting strongly and beautifully with its shifting sands, slower current and less picturesque bottoms which we first encountered 600 miles behind as we entered the Great Plains. The Platte affords rare sport for the angler. Pike, perch, catfish, suckers, etc., abound in its waters, and although not quite so gamy as the trout, oftener attain good size. Geese and ducks are very plentiful, and of course we had good deer and antelope hunting here, anywhere within a dozen miles of the track. We passed over grazing lands here not a whit behind those of the Laramie Plains. Ranchmen are becoming quite numerous, and some very large herds of cattle are owned along the river and its tributaries. An enterprising pioneer, located some twenty miles up the river, is proving the value of Platte Valley soil at this altitude. He raised some 60,000 pounds of potatoes in 1877, and sold them at the railroad for from three to five cents per pound. His experiments with other vegetables demonstrated the fact that all roots can be grown with wonderful

success. He is paving the way for thousands of others who will soon settle along this splendid valley when its advantages are better known. This is quite a point of shipment for ties, thousands being cut in the great forests along the Upper Platte and floated down to Fort Steele annually.

Rawlins is the county seat of Carbon county, and the principal outfitting and transfer point for the Snake River settlement, 75 miles south, as well as for the Ferris and Seminole mining districts, 40 miles north. It has a population of about 800, who are largely dependent upon the railway business here growing out of extensive machine shops, round-house, etc. Resources are numerous and valuable enough hereabouts to build up a large and thriving city. Two miles north of town are large deposits of red hematite—iron ore—which are becoming extensively utilized in the manufacture of paint. Two companies have opened mines, and have built mills to work up the ore. About 200 tons of metallic paint have been manufactured. The product is of such superior quality that different railways use it for outside work where a thoroughly water and rust-proof paint is desired. The deep red freight and flat cars and the station houses we saw all along the line are coated with this. We saw great piles of the ore lying along the track waiting shipment westward. Something like 25,000 tons of this have been shipped to Utah, where it is used as a flux for smelting silver ores. The Ferris and Seminole mines, already alluded to, are undoubtedly rich in gold, silver and copper. Over 100 claims have been located and several true fissure veins are now being developed. Ores run in value from \$100 to \$200 per ton. In a dozen of the mines, carrying a large percentage of gold, beautiful specimens of free gold quartz have been taken. The "Ernest," "Slattery" and "Mammoth" are among the principal mines. There are good wagon roads from Rawlins to these districts, one of them passing on northward to the Big Horn Region. Soda beds, similar to those near Laramie, are also found within 60 miles of Rawlins to the north. The country adjacent and south into Snake River Valley is well stocked with cattle. Shipping facilities being very good at Rawlins, cattle are driven here in great numbers and sent upon their journey eastward. During the writer's visit one firm made a sale of beef cattle to be delivered here the consideration of which was \$52,000. Many Montana ranchmen seek this outlet for their beef. Rawlins is 709 miles from Omaha.

Forty miles south of town, near the North Platte, are some hot springs which bid fair to attract much attention in the near future. Iron, sulphur and magnesia predominate in the waters, the latter reaching the high temperature of 130 degrees. A few buildings of rather inferior quality have been erected for the accommodation of visitors. Good fishing and hunting are side attractions here. The wagon road from Rawlins is very fair, and livery can be obtained at from \$4 to \$6 per day. Board at Rawlins, \$2 to \$3. A mile east of town is a large sulphur spring, almost unnoticed, because unknown. These multitudes of attractions in the Rockies seem to appeal to us mutely now at every turn for the attention and homage that will be richly lavished upon them in years to come.

To the Big Horn.—At Rawlins you can ordinarily meet several old trappers or scouts who have been in the Big Horn region and who declare the route from here to be superior to any other. These men have led European hunting parties in that direction, and the English nobility, especially, always come back wildly enthusiastic and glutted with glories of the chase. Aside from the reputation

of the Big Horn region as a golden mecca for the miner, we can again say from personal knowledge, that the country is prolific in beautiful and fertile valleys, in vast and unexcelled stock ranges, in magnificent scenery, and is alive with large and small game. Following are distances and camping places on one or the Rawlins routes. The last 125 miles is lined with good camp grounds:

	Miles.
From Rawlins to Brown's Cañon..	12
Brown's Cañon to Seminole.....	23
Seminole to Sand Creek.....	10
Sand Creek to Sweetwater River.....	15
Sweetwater River (bridged over) to Rattlesnake Range.....	16
Across Range to Poison Springs Creek.....	8
Poison Springs Creek to Cloud Peak.....	125
 Total.....	 209

Ponies and outfitting goods of all descriptions can be purchased at Rawlins, and parties in need of a good guide should always look up Tom Sun, an old hunter and government scout, who knows the country thoroughly and is just the man to chaperon a hunting or exploring party. His address is Rawlins.

Snake River Valley.—We spent a week most delightfully with the hospitable settlers of Snake River Valley, trout-fishing, hunting and exploring among the hills. The valley is about 75 miles south of Rawlins by a good wagon road, was first settled six years ago and now contains 300 of as thrifty, "well-fixed" and contented denizens as one could wish to see. Snake River rises among the snowy gulches of Hans Peak, and flows southwestward 125 miles to its junction with Bear River. It and its numerous snow-fed tributaries are full of trout and the bluffs along its lower length, or the mountains at its head, abound in elk and deer. The best grizzly bear hunting in the whole west is near its headwaters, but we hunted grizzly bears with a well organized platoon of sharp-shooters and recommend that their rights to all country which they may have pre-empted be declared sacred and inalienable.

Wheat, oats and potatoes are produced in the valley quite extensively. Dairying is also a favorite and very profitable pursuit, and some 10,000 head of good beef cattle are grazed here. Coal of a superior quality is very plentiful; all varieties of mountain timber ditto. Dixon is the principal post office, distant from Rawlins 80 miles. Accommodations can be secured at different ranches at from \$8 to \$10 per week.

Looking out over the desolate expanse of sand and sage brush at Rawlins, Green River and other points the visitor can hardly believe that Wyoming possesses such a wealth of farm and pasture lands as has been credited her. Having ridden on horseback lengthwise of the territory from end to end by two different routes, and across the broad domain north and south the same way, the writer feels thoroughly justified in saying that *it would have been impossible to select another such an apparently barren route for the railway.* The Platte, Sweetwater, Wind, Yellowstone, Laramie, Powder, Big Horn, and other splendid water courses to the north, with their numberless tributaries, furnish the most beautiful and productive valleys in the Rocky Mountain region, with millions of broad and fertile acres unclaimed and to be had for the simple taking. The throngs of tourists and emigrants hastily passing through should remember these important facts and not take it for granted that sections which

cannot be seen—because a better railroad grade has carried them hither—are also of this forbidding nature. The few occupied valleys of Montana, all north of Wyoming's agricultural belts, and depending upon irrigation, produce about three million bushels of grain and potatoes annually, which, with other farm productions, sell at home for over five million dollars. The finest beef also comes from the all-the-year grazing lands of that northern latitude, and is only one among the many other points illustrating the capacity of Wyoming's equally creditable but unsettled plains and valleys.

The Rock Springs Coal Mines.—Among all the vast resources of this western country which are made to pour out wealth and add to the nation's prosperity through the enterprise of the Union Pacific Railway Company, few are more important or more thoroughly utilized than the great coal measures. We passed through an essentially coal formation for hundreds of miles, and here at Rock Springs, 831 miles from Omaha, had a fair illustration of its value as well as of the company's gigantic "side enterprises." There are several veins of semi-bituminous coal here, ranging in thickness from four to ten feet and extending far back into the hills. The coal cokes fairly, and, as ordinarily consumed, burns into fine ashes without clinkers. It is especially liked for blacksmithing, smelting and steam-generating purposes, and is not only eagerly sought far to the west, but is about the only coal consumed along the line eastward to Omaha and sells largely in Colorado. About 150,000 tons were mined here in 1877, selling on the track at \$1.75 to \$2 per ton, and at distant points at an average of \$5. One hundred and fifty white men and the same number of Chinamen are employed the year round. Engines, hoisting apparatus and interior arrangements are models of system and completeness. Rock Springs is a village of 500 people. Besides the life given it by these great mining enterprises, it has attained considerable importance as a cattle-shipping point.

Green River City.—Fifteen miles west of Rock Springs is Green River City, the end of a regular division of the road, and therefore possessing machine shops, round-houses, and other accessories of a railroad town. It is also the county seat of Sweetwater county—an empire of wealth and beauty in itself—which boasts an area of 30,000 square miles. Sweetwater is the banner agricultural county of Wyoming, nearly every variety of small grain and vegetables being regularly produced in the northern valleys. The government purchases all the grain and much of the produce offered for sale and pays good prices, giving eastern prices with cost of transportation added. This is consumed at Camps Stambaugh and Brown, in the vicinity. The rich Sweetwater and Wind river gold mines are located in this county, from 100 to 150 miles north of Green River City. A large proportion of the Big Horn range, with its vast undeveloped wealth, occupies the northern end of the county.

The Wind River and Sweetwater Regions.—The quartz and placer mining districts of Sweetwater, South Pass and Wind River cover an area of about 2,000 square miles. A dozen years ago one of the wildest of western stampedes occurred to those mines on the strength of immensely rich placer and quartz discoveries. From one of the quartz mines \$200,000 in gold was quickly taken by means of the rudest appliances, and we know of one man, W. C. Erwin, who rode out to Cheyenne with 65 pounds of gold dust from the placers. But the Indians were jealous of this little army of treasure-seekers, and soon discouraged mining operations by killing the pioneers on every hand. The richer gulches

were also soon worked out and miners did not care to risk their scalps in those days for a paltry four or five dollars a day. Renewed attention is now being attracted to these mines by the discovery of new and richer ones. Near Two-Ocean Pass and on Clark's Fork, a little beyond the old districts, valuable quartz and gulch mines were discovered in the summer of 1877, and strong mining camps are now organized there. Eight or ten stamp mills are in operation in the old and new districts crushing the rich free gold ores. It is generally believed that great mineral belts are to be found in the mountains still northward, as reliable explorers claim to have found such belts in their wanderings there. The speedy settlement of the Indian troubles along that border will undoubtedly result in a very rapid development of northern Wyoming, as it is at once the great mineral country and the garden spot of the territory.

Near Camp Brown, 155 miles north of Green River City, are hot springs of unusual merit. The water is forced upward through numerous orifices in the bottom of a pool or basin, which covers 6,000 square feet, and a large stream is constantly discharged into the ice-cold current of Little Wind river, near by. Carbonic acid and chloride of lime are given off abundantly, the temperature running from 100 to 120. Rheumatic affections and diseases of the skin are often eradicated by a short season of bathing. The Shoshone Indians, whose agency is located here, have an interesting tradition, making this out the mythical "fountain of youth." A good bath-house is at hand. Daily stages from Green River City; fare, \$27; accommodations along the line, and at Camp Brown \$2.50 to \$3 per day. Trout fishing is superb in numerous streams. Hunting is also first-class in the mountains away from the immediate vicinity of the agency.

Stages—"Sweetwater Daily Stage Line"—run nearer the Big Horn region from Green River City than from any other point and traverse a tolerably well settled country the entire distance. Following are the principal camps, the stages running as far as Camp Brown:

From	Miles.
Green River to Alkali Station.....	21
Alkali Station to McCoy's Ranch.....	27
McCoy's Ranch to Dry Sandy.....	22
Dry Sandy to South Pass City.....	25
South Pass City to Camp Stambaugh.....	23
Camp Stambaugh to Lander City.....	29
Lander City to Camp Brown.....	14
Camp Brown to Cloud Peak, Big Horn Mountains.....	149
<hr/>	
Total.....	310

This is also one of the routes to Yellowstone National Park. The tourist takes stages of this line to Camp Brown, and there outfits with ponies, pack animals, etc. The wagon road was not completed from Camp Brown in January, 1878, but extended 100 miles up Wind River Valley, from which point a trail led to the Park, about 60 miles distant. The wagon road was to be built to the Park during the spring of 1878.

Unique and beautiful petrifications and fossils are found in the vicinity of Green River City, and several cañons through which the river passes below town are worthy of extended notice, but *tempus fugit*.

Leroy Mineral Spring.—Two and a half miles west of Leroy, the latter be-

ing on the Union Pacific road, 919 miles from Omaha, is the Leroy Mineral Spring. The water is quite extensively quoted in western Wyoming on account of its medicinal virtues, and testimonials from surgeons of the army and others are not wanting to prove that the spot will soon be much sought on account of the spring alone. The water is highly recommended for the cure of dyspepsia and toning-up of the system. The following is an analysis of the water as made by Assistant Surgeon Smart, of the United States Army. It should be stated, however, that the very important element of carbonic acid could not be determined, as much of this had escaped while the water was in transit from the spring to Camp Douglas, Utah:

	Grains, per gallon.
Carbonate of Magnesia.....	50.680
Carbonate of Lime.....	58.674
Sulphate of Lime.....	41.104
Sulphate of Soda (Glauber's salts).....	116.655
Chloride of Sodium (common salt).....	270.200
Iron and alumina.....	1.162
Total.....	538.475

Potassium is also present in small quantity.

Trains often stop at the spring to enable passengers to drink the water, and we have enjoyed several refreshing draughts here. The valleys and bluffs surrounding abound in agates and petrifications, while iron, soda and fresh water springs are numerous and often located near together. A little further west, near Piedmont, is a cluster of remarkable soda springs. The sediment thrown out by the principal one has built up a beautiful, conical-shaped body some fifteen feet high. The water is very pleasant to the taste, and undoubtedly beneficial for certain complaints.

Great Flume and Lumber Enterprise.—At Hilliard, 943 miles from Omaha, the railroad passes under an elevated flume, said to be the longest in the western country. It was constructed by Salt Lake capitalists, about three years ago, as a means of transit for lumber, wood and ties from the heavy forests in the Uintah mountains, thirty miles southward, to the track. The flume is twenty-eight miles long, four feet across the top and constructed in a V shape to facilitate the descent of its valuable freight. It required the work of 700 men for three months to complete it, and cost altogether \$250,000. Among items used in its construction were 2,500,000 feet of lumber, 5,000,000 feet of timber, and 100 tons of nails. Its fall is from 100 to 300 feet to the mile, and when nearly full of water the timber thrown into it descends with astonishing velocity. During forty days of the season of 1877 18,000 cords of wood were floated down to Hilliard in addition to other products of the pineries. The same company owns a saw mill at the head of the flume which turns out some 35,000 feet of lumber daily.

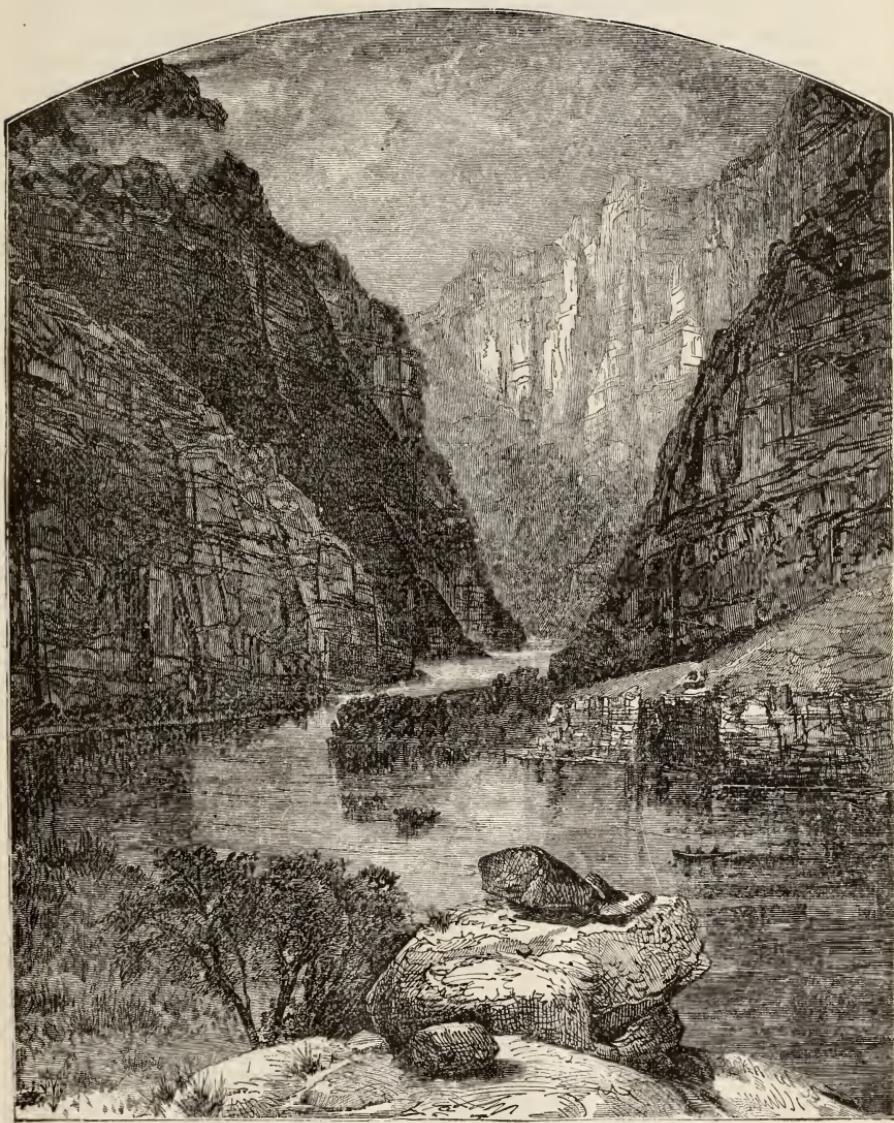
The cord wood is strewn along in sight of the track in a pile 20 feet high and a mile long. It is used in the manufacture of charcoal. Twenty-nine kilns were at work during our visit and produced in 1877 2,000,000 bushels of charcoal. This important product is shipped principally to the smelting works of Utah, but is also partially utilized here at Hilliard by a small smelter. For the six months ending January 1, 1878, the smelter produced 1,187 tons of bullion from Utah ores, worth \$160 per ton.

Bear River and Valley.—The clear mountain water used by the Hilliard flume is from Bear river, and soon after leaving Hilliard we entered the beautiful valley of this stream. The river rises in spurs of the Uintah mountains, 30 or 40 miles southward, flows through a rugged and inviting country for the sportsman and tourist northward 150 miles into Idaho. There, making an abrupt bend, it turns almost directly southward again, and finally empties into Great Salt Lake. At places the valley is five to ten miles wide, thickly settled with Mormon farmers and stock growers, and then, suddenly contracting into romantic defiles, is as wild and quiet as any huntsman or angler could wish. Where the soil is cultivated bountiful crops of wheat, rye, oats, barley and hardy vegetables are produced. Stock in Bear River Valley presents a wonderfully different appearance from that on the plains. Instead of commencing with Texas cattle and Mexican sheep, the ranchmen almost invariably started with a small nucleus of American cows and good graded sheep. By steadily improving these they have finally produced a grade of beef, mutton and wool which is always eagerly picked up by dealers in such articles at very superior prices. Dairying is at many points a leading and lucrative pursuit. Cattle and sheep are generally fed and sheltered during winter in the upper half of the valley.

Evanston, 957 miles from Omaha, is located in this valley, at an altitude of 6,770 feet. It is the last town of importance in western Wyoming, and is the county seat of Uintah county. Another division of our great railway ends here, and we notice, in consequence, an immense 20-stall round-house and large car and machine shops. The town contains 1,200 inhabitants, is well built, and one of the most prosperous stations on the line of the Union Pacific. It is the designated shipping point for a large proportion of the Montana cattle which find a Southern market. Two companies add largely to the thrift of the place by their extensive operations in the lumber and charcoal business. The Evanston Lumbering Company cut about 1,500,000 feet of lumber in 1877 and produced a large quantity of charcoal. Bear River here furnishes a splendid water-power, and the town by its superior facilities for manufacturing and the enterprise of its citizens, must soon become an important center for this interest.

Fuel for the Whole West.—Two or three miles west of Evanston are the most extensively worked coal deposits in the western mountain region. The veins are from 20 to 35 feet in thickness, and are being worked by 400 miners. The Union Pacific Company, with other corporations, are producing about 300,000 tons of coal per annum. A large percentage of that finds its way to Utah, Nevada and California. From the statements made in these pages it will be seen that the immense coal measures of the Union Pacific Railway *supply nearly the entire northern half of the great trans-Missouri region with fuel.* The "bonanza" silver mines of Nevada, the gold fields of California, the gold and silver belts of Colorado, and the great wheat lands and pastures of Wyoming and Nebraska all in the end pay important tribute to these never-ending deposits of lignites.

Forty miles southeast of Evanston is a perfect mountain of sulphur. The immense deposit carries from 50 to 90 per cent of pure sulphur. A United States patent has been secured on the property by a company of western gentlemen. Flowing oil springs also have been discovered ten miles east of Evanston and are in process of utilization. The surface oil, which has been draining



GATE OF LADORE, COLORADO RIVER.

away in copious quantities, is found to be equal to the best of heavy lubricating oils for stationary or locomotive engines.

Unexcelled trout-fishing in Bear river, rare hunting for large and small game in the vicinity, and most picturesque surroundings, combined with fine cold sulphur springs within half a mile of town, and a pure mountain atmosphere, render Evanston a point much sought by tourists and health-seekers. At the "Mountain Trout House" the visitor can enjoy a bill of fare, which we will guarantee will change his entire make-up in one twentieth of the seven-year period which scientists have allowed for such a seemingly difficult feat. Venison, elk, antelope, ducks, mountain grouse and other game, and the ever welcome mountain trout, are always on the table in season. While upon the subject we should add that Union Pacific Railway eating-houses are proverbially sensible and lavish upon this point of furnishing their guests with game. You therefore not only enjoy one continual round of novel experiences, wonderful and romantic attractions, and breathe the air at an altitude where disease cannot originate, but you can glide royally and lazily onward in your palace car, and feast on the luxuries of the country, whether you are inclined to hunt them or not.

Board at Evanston, \$2.50 to \$4; livery, \$5 to \$7. Good wagon roads up or down the valley, and easy bridle trails among the bluffs. Camping out is as enjoyable from here as from any point on the road; outfitting about the same expense as at Laramie City, provisions from the east costing more, but ranch produce a little less. Yellowstone Park is 290 miles due north of Evanston, and can be reached by good roads half way, and trails the remainder of the distance.

Echo and Weber Cañons.—It does seem a little unfortunate that financial and other considerations will not always permit railways to pass through nature's most beautiful pathways. The tourist should remember that to get the *full* benefit of his trip he must occasionally climb the mountains, explore the cañons, and dive into the mysteries of an enchanting region which otherwise he only gets a glimpse of. In passing through Echo and Weber cañons, however, the Union Pacific treats its patrons to views which in themselves are well worth a trip across the continent, and if you are among the kind who cannot tarry, here is the place among all others to open your eyes to the glories of the immediate surroundings. For sixty miles we had a perfect kaleidoscope of novelties, covering all the grounds of natural beauty, wilderness, grandeur, sublimity, until we were fairly tired of looking. In such small space the writer can only attract attention to a few striking features of the wonderful dash down through these famous gorges, with the passing observation that the name of those unmentioned is "legion."

Echo Cañon is really entered at Wasatch, 968 miles from Omaha. The bright red sandstone crags soon greet you on either side, and assume shapes so wonderfully fantastic that you can imagine them almost anything. Plunging through a tunnel, we had in quick succession "Castle Rock," with its arched doorway, giant pillars and frowning battlements; "Needle Rocks," sharp pointed and standing out against the sky like a group of old church spires; "Winged Rock," a ledge surmounted with a mass of sandstone which, from our point of view, resembled the wings of some feathered monster; "Steamboat Rock," named from the immense crag jutting out like the prow

of a steamer, with the flag of old Ireland (a cedar in its perpetual green) planted firmly and with never fading colors; "Sentinel Rock," rising up grimly and alone, as if to survey the march of progress; and hundreds of others. It is the grandest place in the world for the exercise of imagination. Think of any form or figure, animate or inanimate, and it will rise up clearly among these splintered, weather-worn, gnarled old rocks of Echo and Weber cañons, if you give a lively fancy one half its wonted play. Echo Cañon was well named, for the shrill whistle of our engine and the softer ringing of the bell seemed thrown from wall to wall and intermingled with the steady hum and rattle of our wheels, until a wild and almost deafening Babel of sounds rose from the level of the pretty stream to the summits of the awful cliffs. These "Witches," "Cathedrals," "Devil's Punch Bowls," "Pulpit Rocks," "Swallows' Nests," "Girls of the Period," and their thousand mocking reinforcements along the battlements then seemed to hurl back the refrain upon our humble heads as only such a miscellaneous array of talent could.

At Echo City—which is located in a perfect little fairy glen—we entered Weber Valley, and found cosy rural homes clustered along one of the most beautiful of all western rivers. From here the Summit County Narrow-Gauge Railway leads up Weber Valley to Coalville, 7 miles, where some coal mines are being worked. These streams are full of trout, and waterfowl seem especially fond of the surroundings, for we saw them on the river as we passed swiftly along. It would be difficult to find a more delightful spot for a few days' sojourn than here. Of course one would have to put up with plain farmhouse living, but having entered the land of fruit and flowers, one would at least enjoy them with the luxuries of fresh mountain trout and small game. The cañon above, with its queerly grouped walls from 500 to 800 feet high, and the dozens of side defiles and rocky amphitheaters, together with the finny beauties in the clear and rushing waters, would furnish room for a week's delightful exploration.

Weber Cañon has its multitude of attractions, as well as Echo. The rocks change in color to a deep gray, and are less extravagantly shaped, as a rule, than those left behind, still often rising to prodigious heights, and narrowing sometimes to the river's edge on either side. The "Devil's Slide," probably the most remarkable rock formation to be found between the oceans, is soon noticed on the left. It consists of two parallel ledges of granite jutting straight up along the mountain side 14 feet apart, and at times 50 feet high. The Thousand Mile Tree—1,000 miles from Omaha—will be noticed near by, with its very distinct label.

CHAPTER V.

UTAH TERRITORY—WEALTH, DEVELOPMENTS AND ATTRAC-
TIONS—THE MORMON CAPITAL.

Having fairly entered the Territory of Utah, we informed ourselves in a general way of its natural features, advantages, etc. Its area is something over 84,000 square miles, or 54,000,000 acres, embracing every variety of mountain and valley scenery, and probably a greater diversity of climate than any region of similar extent east of California. Cultivation of the soil is carried on almost exclusively by the aid of irrigation, the melting snows of the mountains affording sufficient water to render most of the valleys highly productive. The soil is to a very great extent formed of rich washings from the mountains, and consists principally of a gravelly loam. Wheat is the great staple production, twenty-five bushels per acre being the average yield, and sixty to seventy bushels is not an uncommon result in favored localities. Oats, rye, barley and flax are also cultivated with great success, and all kinds of hardy vegetables grow astonishingly large, and of superior quality. No section can surpass Utah in the yield and quality of potatoes. In the semi-tropical climate of southern Utah cotton has been quite extensively produced. During the civil war a considerable quantity of this was exported by wagon over the mountains and plains, 2,000 miles, to eastern states, at remunerative prices. The southern counties also produce figs, madder, indigo, grapes and almonds. Indeed, fruit raising in all the valleys, north and south, is one of the most important items. Apples, pears, peaches, apricots, plums, grapes, currants and other fruits, are produced to such an extent that they have become important items of export to distant states. Stock raising is generally engaged in, and returns large profits.

Mining.—The mountains of Utah are found to contain exceptionally large deposits of silver, lead, copper, iron and coal; and in some localities gold, antimony and cinnabar are present in sufficient quantities to pay for working. Salt is shoveled from the shores of Salt Lake by the ton, and sulphur, salt-peter, gypsum, plumbago, soda, rock salt, marble, slate and limestone are among kindred resources. Utah now claims to be third in the list of states and territories yielding the precious metals. Her ores are generally very easily produced, often lying in largest deposits near lines of her splendid system of railways. They are easily worked as a rule, and dozens of mills and smelters are already in successful operation within a few miles of the most noted mines. Rich discoveries are constantly reported from the more remote districts. Some of these, in the southern portion of the territory, consist of immense deposits of a high grade of silver ores.

Manufacturing.—Utah leads all other territories in the value and diversity of her manufacturing enterprises. Home production has been the golden maxim, and it is doubted whether any community in the land comes nearer perfect independence by producing all articles of common use. Water-powers are unrivaled all over the territory, hundreds of mountain streams leap-

ing from the cañons, and needing only slight expense to utilize them. There are a number of woolen mills manufacturing the fleece from her flocks into fabrics which are not only made up and worn at home, but also find market abroad. Then there are tanneries, shoe factories, foundries, planing mills, fire-brick and tile works, etc., all utilizing home products and stimulating home industry.

Productions and Development in 1877.—The comparatively small beginning made here in the heart of the trans-Missouri region in 1847 has grown and expanded until now the settlements extend a distance of 350 miles north and south, and 250 east and west. The population is estimated at 140,000, an increase of 50,000 since 1870. There are eight lines of railway in the territory, with a total of nearly 500 miles of track. The product of the mines in 1877 is reliably placed at \$7,400,000, against \$1,300,000 in 1870. Of this amount over \$5,000,000 is in silver and \$1,600,000 in lead, the other items being gold, copper matte and copper ore. The farm products of the same year were valued at over \$10,000,000. Principal among these items were—wheat, 3,750,000 bushels; potatoes, 2,250,000 bushels; hay, 246,000 tons; dried peaches, 1,500,000 pounds; wool, 1,700,000 pounds. Live stock to the value of nearly \$2,000,000 was marketed. Considerable wheat is exported, one commission house alone having shipped 100 car loads to Liverpool during 1877. The total productions of the territory for the year are valued at over \$21,-000,000. These outlines will assist the reader in forming some idea of the wealth latent and developed in Utah.

Climate, Scenery and Game.—Although one may experience the rigors of an arctic temperature on the mountain summits, or the crisp atmosphere of northwestern territories in the elevated valleys, we find in the great Salt Lake Basin a climate mild and agreeable almost the year round. The temperature, according to observations at Salt Lake City, seldom rises above 90 degrees, or falls below zero. Along Great Salt Lake, which has a shore line of nearly 300 miles, and furnishes an horizon like the ocean itself—although 4,200 feet above the sea—is to be found the most peculiar climate in the world, combining, as a local physician says, “the light, pure breezes of the neighboring mountains with that of the briny sea, thus enabling us to inhale a marine atmosphere as soft as on the Pacific shores, blended with a cool, Alpine air.” Chronic affections rarely originate here. The climate is an almost certain panacea for asthma, and in cases of incipient consumption has worked wonders. Digestive disorders, nervous affections, etc., are often modified, if not entirely cured. At Camp Douglas, three miles from Salt Lake City, only one death has been recorded in a period of four years, out of an average of 340 residents there. Numerous hot springs, and the waters of the great Dead Sea, afford delightful tonic baths. The hot sulphuretted waters of the springs are proverbially efficacious for rheumatic and blood diseases, while it has been discovered quite recently that salt water bathing in the lake is a positive cure for catarrhal and other affections. The territory is especially prolific in

Fine Scenery.—The greatest mountain-locked lakes are here; the most wonderful and pleasing features of cañon scenery are found in the defiles of the principal streams, and the valleys present most charming rural landscapes. A view of the great Mormon city itself, embowered in foliage and hemmed

in by high mountains on three sides, with its enchanting vista of the inland sea, is a picture never to be effaced from the mind. The most interesting point of it all is that all attractions are almost invariably near the line of the Union Pacific or adjacent to its branches and connecting lines, and can be taken in at slight effort and expense by a series of short railway excursions from Salt Lake City.

The mountain streams and fresh water lakes are literally alive with trout, the angler often finding really fine fishing within stone's throw of the railway track. Mountains and forests, farther removed from civilization, and yet of easy access, abound in elk, deer, bears, foxes and beavers. The "grizzly," in all his pristine vigor, can be encountered at various points. The shores of the lakes are favorite resorts for innumerable geese, ducks, swans, pelicans, etc., and most of the streams furnish excellent hunting for that class of game. Sage-hens, grouse and rabbits are found in most of the valleys in great abundance. California quail have been introduced with success, and the prairie chicken has obtained a good start in the valleys of northern Utah.

Certainly a rare combination of wealth and attractions are centered here. The mines, water powers, farm lands and pasturages are not yet half utilized. The beauties of scenery and value of climate and waters are almost unknown to the world. The huntsman and angler have scarcely made themselves manifest. In all of these items Utah stands out fresh, inviting, unexcelled.

Ogden is the western terminus of the Union Pacific, and the first city of note we entered in Utah. It is 1,033 miles from Omaha, 36 miles from Salt Lake City, and 4,340 feet above the sea. From here the Central Pacific Railway leads westward 882 miles to San Francisco, and through passengers change to the silver palace cars of that noted California line. The Utah Northern Branch of the Union Pacific Railway (narrow-gauge) extending northward to Franklin, Idaho, and the Utah Central Branch of the Union Pacific (standard broad-gauge), running southward to Salt Lake City, combine with the great overland roads to render Ogden quite an important railway center. Ogden river has its exit from a lovely cañon in the Wasatch mountains just back of town, and empties into the Weber four or five miles below. The city is thus abundantly supplied with water power, which is to some extent already utilized by flouring mills, woolen mills, and other manufacturing enterprises. The clear mountain water is also led through the streets, and is used everywhere for irrigating purposes. The luxuriance of the foliage, splendid background of the rugged Wasatch range, and the broad, level streets, at once impress us pleasantly upon arrival. The environs are made up of some of the finest grain and fruit farms in Utah. The city claims 6,000 inhabitants, has a number of Gentile as well as Mormon churches, and several public schools. We found first class hotel accommodations at Beardsley's Railroad House, at the depot, where fish and game are nearly always appetizing features of the bill of fare; but the city proper, which is nearly a mile distant, lacks somewhat in this respect.

Ores carrying gold, silver, lead, iron, antimony and tin have been found in the mountains within a radius of ten miles. Vast quantities of iron ore, yielding from 60 to 70 per cent of pure iron, are found within five miles. Sarpy, the great manufacturer of iron and steel, says the magnetic ores here are the finest he has ever seen. The ores have only been utilized as a flux

for silver ores at the smelting works thus far, but Ogden people are fairly charged with brilliant iron manufacturing enterprises, which must surely, ere long, be transferred from paper to matter-of-fact realization. The locality certainly presents superior inducements for the investment of capital in this and kindred institutions. A smelter for silver ores was in course of construction during our visit.

Ogden Cañon.—No tourist can well afford to pass this point and deny himself a side trip through Ogden Cañon. A drive of a dozen miles will enable one to view the most interesting features, and this can easily be accomplished in half a day. The scenes are not a whit less grand and beautiful than those of far more famous cañons. The river, a dozen yards wide, two or three feet deep and a perfect mirror of purity, affords every variety of cascade and eddy, of foaming surges against the monster boulders, and of placid pools beneath the shadows of crowding walls. It is alive with the gamiest of trout, and he must be a novice who fails to land plenty of these with tempting bait. Two or three miles up are some warm springs, and half a mile farther, in a pretty little wooded opening, are hot sulphur springs of pronounced value. At some of the narrow points the walls rise up almost vertically to the height of 1,500 feet and begrudge even room for roadway. The tops and sides of the mountains are still ornamented with the deep green foliage of the pines. The road is everywhere romantic in its meanderings at the water's edge or higher up under the very shades of the summits. Five or six miles up you suddenly emerge into a perfect little Eden of a valley, where the walls have retreated somewhat and left room for dozens of picturesque and cosy homes. There is quite a little village here along the river banks, and the inhabitants are certainly to be envied their towering walls of granite, their tree-embowered homes and their royal exit to the world below.

Taylor's Cañon and Water Fall Cañon are also prominent attractions near Ogden. In the latter, we were told, a sheet of water makes one grand leap over the shelving rock into a wild abyss 400 feet below. About twenty miles north of the city, along the Utah Northern Railroad, is a very interesting and valuable group of hot springs. Enough water is emitted to furnish power for a large mill, and runs up in temperature to 136°. It looks perfectly clear, but is strongly charged with iron. Scenery in the vicinity is truly grand, and many cold water springs in the neighborhood add to the attractiveness of the place. A climb up the mountains back of Ogden enables one to get a view taking in thousands of square miles of mountains, valley, and Great Salt Lake. There is a wealth of beauty and grandeur here in the vicinity of Ogden, but we must hasten to our notes leading southward.

The Utah Central Branch of the Union Pacific Railway was completed from Ogden to Salt Lake City in 1870, and was the pioneer of Utah's local lines. Like the six railways which have since been built in the territory it was constructed without subsidy or land grant, the citizens putting their shoulders to the wheel of progress and going to the bottom of their pockets for the necessary funds. Connecting with the Utah Southern Railway at Salt Lake City this forms a straight north and south broad-gauge line along the richest mineral region and through the finest farm and fruit lands in Utah 111 miles in length. This entire line has also been merged into the Union Pacific Railway system, through the enterprise of Mr. Gould. John Sharp, a Bishop of the Mormon

TO THE ROCKIES AND BEYOND.

Church, is General Superintendent of the line. We found the road-bed one of the best in the west and the cars models of neatness and comfort—a state of affairs which was readily understood when we noticed the lively freight and passenger traffic and became better acquainted with the officers in charge. The following statement of freight business over the road in 1876 and 1877 will give the reader an idea of the importance of the Utah trade:

	1876.	1877.
Freight received, lb.....	196,499,010	188,985,005
Freight forwarded, lb.....	<u>76,975,279</u>	<u>91,794,898</u>
Total, lb.....	273,477,289	280,779,903

In scanning over the items received we notice that coal, coke, building material and merchandise compose three-fourths of the tonnage, while base bullion and silver ore furnish four-fifths of the tonnage forwarded. The passenger traffic presents an equally gratifying status. Passenger fare, Ogden to Salt Lake, is \$2.

Southward from Ogden the road follows along the base of the Wasatch mountains all the way to Salt Lake City. The range is here very steep and rugged and sometimes cleft with great fissures or cañons from summit almost to base. We soon reached the bench lands overlooking Great Salt Lake, and from this moment until we again left Utah were treated to never-ending panoramas of the American Dead Sea, its almost "thousand isles," and its depths of mirrored mountains. Kaysville, 16 miles; Farmington, 21; Centerville, 25, and Wood's Cross, 27 miles from Ogden, were passed in rapid succession. They are the villages of thrifty Mormon farmers, usually almost buried in foliage, orchards and grain fields, and nestled under the sheltering walls of the Wasatch, with the glorious vista presented by the lake in front. With these great mountains rising up over the picturesque settlements on our left and the irregular shore line of the lake in almost constant view on our right, the vision was constantly strained and still unsatisfied. Near Kaysville the farmers have developed something new in agriculture—new in this region at least. There are here and elsewhere vast tracts of "desert lands," or lands which are so high above the stream that they can never be irrigated. Several years ago wheat was sown upon small patches of this seemingly arid and valueless soil. A tolerably fair crop was raised without artificial moisture or unusual rain, and now broad areas of this kind of land are being put under cultivation annually, producing as high as twenty bushels of wheat per acre. These are really warm alluvial soils formed by the crumbling of mountain ranges.

SALT LAKE CITY.

Thirty-six miles south of Ogden and 1,069 miles from Omaha is the beautiful "City of the Saints." It has an altitude of 4,261 feet above the sea, or 43 feet above the great Lake. In claiming 30,000 population for it the citizens can scarcely be called extravagant, for indeed you hardly know when you enter or leave it. Coming or going in almost any way you penetrate, upon the outskirts, blocks upon blocks of cottage homes, each with its masses of flowers, its plots of rich green vegetables, and its graceful clumps of trees bending under the weight of luscious fruits. It is indeed the city of cottage homes, and it is declared by good

authority that the number of people who own the houses they live in is here greater in proportion to the population than in any city of the Union. Many of these within the city limits subsist entirely from their own fertile little truck patches, which lend a rural air to their homes. The city is one perfect mass of foliage, blooming and blossoming "as the rose," where thirty-five years ago were only the sage-brush brakes and bench lands of the new edition of Jordan. Rows of giant elm, mulberry, locust, or other varieties of shade trees now follow all the streets far out through the suburbs, and are continually refreshed by streams of pure mountain water which ripple musically along the broad sidewalks everywhere. It is the universal edict of travelers that only one or two cities on the continent of like size command such unvarying charms and interest for oft-repeated visits. You might become almost tired of the world and vote every other resort a bore, but Salt Lake scenery, Salt Lake atmosphere and Salt Lake life would hold you with their pleasing peculiarities to visits twice a year for many years at a time.

To start with, the city won our heartiest admiration for the charms nature has lavished. Spurs of the Wasatch mountains rise up to great height a few miles distant on the east and north, the site sloping gently to the south, and there being washed by the waters of the Jordan. North of the city the mountain of the Prophecy—said to have been shown to Mormon leaders many years ago in a vision—towers grandly above the heights surrounding. West of the city, twelve miles, rise rugged ranges, marking the shores of the great Lake; and southward are the royal landmarks of the Wasatch range, Twin Peaks. Of course the chief attraction, Great Salt Lake, is always visible from elevated portions of the city, its bright bosom and crystal depths, constituting an eternal mirror for the glories of the mountain summits surrounding. Such views! and then a perfect network of drives among orchards, beautiful lawns and pretty rural homes, over hard, dry roads, are pleasures not to be overlooked. Then Salt Lake hotels greet the stranger with such an inviting and home-like air that he is constrained to call them "home," be his stay for a week or a month. There are several first-class houses, and any quantity of good comfortable places of lesser pretensions. Of course the "Walker House," G. S. Erb, proprietor, leads all hotels between Omaha and San Francisco in points of size, elegance and merits of *cuisine*. It is supplied with an elevator, water and gas on different floors, and is a model of convenience and system generally. The "Townsend" is another house here ranked as first-class. The rates of these are only three dollars per day. Of the second-class houses the "White House," "Clift House," and "Valley House," can all be recommended. Their charges are two dollars and two dollars and a half per day.

The Sulphur Baths.—Being comfortably domiciled, a bath in the famous warm sulphur springs, inside the city limits, is a proper luxury to indulge in. Street cars lead from all hotels to the bath-houses, as well as to other points of interest in the city; uniform fare, ten cents. The lukewarm waters are emitted in great quantity—10,000 gallons per hour—at the foot of a spur of the Wasatch, and are led directly into three or four large bath-houses. The temperature ranges from 95° to 104°. Here we found the great plunge or swimming bath, a ladies' swimming bath and a smaller institution of the same sort for boys. In addition there are small rooms where the tub and shower-bath can be enjoyed privately, and Turkish, hot air and Russian baths to suit special

cases. The pure warm sulphur water is constantly flowing through these apartments, so that there is the great merit of freshness and cleanliness to start with. But how can we describe the delicious sensations produced by a plunge in the waters of the great swimming-room. No bath could afford a more delightful feeling of ease, or impart a more healthy glow and animation to the whole system. Fifteen minutes here of splashing and diving and kicking up the great white flakes of sulphur which have formed upon the perfectly smooth floor, are worth a hundred-mile trip—yes, a thousand, if such priceless luxuries were not so thickly distributed among our western mountains. Parlors, waiting rooms, and refreshments are not wanting; and the grassy lawn with its noble trees, render the spot one always to be remembered with pleasure. In these springs alone Salt Lake City possesses a luxury and an attraction which in years to come will add thousands to her number of visitors. Following is an analysis of the waters as given by Dr. Charles T. Jackson, Chemist and Geologist, of Boston:

"Three fluid ounces of the water, on evaporation to entire dryness in a platina capsule, gave 8.25 grains of solid, dry, saline matter.

Carbonate of Lime and Magnesia	0.240	1.280
Per Oxide of Iron	0.040	0.208
Lime	0.545	2.907
Chlorine	3.454	18.421
Soda	2.877	15.344
Magnesia	0.370	2.073
Sulphuric Acid	0.705	3.748
	8.229	43.981

It is slightly charged with Hydro Sulphuric Acid Gas, and with Carbonic Acid Gas, and is a pleasant, saline, mineral water, having valuable properties belonging to Saline Sulphur Springs."

A mile farther north, also right at the base of the mountain, are the *hot* sulphur springs, which must never be overlooked. We emphasize the word hot because the water spurts out with great force at a temperature of 200° or more. Eggs thrust into the pools boil in about regulation time, and meat can be cooked thoroughly (and seasoned, too!) in an incredibly short period. Flowing out into the meadow near by the water has formed a pretty little lake, called Hot Springs Lake, a strange feature of which is the fact that trout and other fish have been seen in it, apparently flourishing in the tropical and sulphur-scented waters. Large volumes of steam are often noticeable over the springs and along the stream. The following is an analysis of these waters:

Chloride of Sodium	0.8052
" " Magnesium	0.0288
" " Calcium	0.1096
Sulphate of Lime	0.0806
Carbonate of Lime	0.0180
Silica	0.0180
	1.0602

Specific gravity, 1.1454.

Two miles east of the city, and on high bench land overlooking it, is Camp Douglas, one of the best built and most beautifully located of all our military posts. Quarters for both officers and men are solidly constructed of the handsome stone found in the mountains near by, and all have a never-failing supply

of the purest of mountain water from Red Butte Cañon. A few miles below is Emigration Cañon, the entrance to which is only four miles from the city. Besides abounding in scenes of the wildest grandeur, it possesses great interest from the part it has played in Utah history. It furnished the first highway for the Mormon emigrants when they entered the valley thirty years ago, and founded the new Zion. Still, a few miles below, and six miles southeast of the city, is Parley's Cañon. The scenery in this is especially bold and impressive, the mountain sides of the pass rising with wild abruptness from extremely narrow gorges, and ornamented on their summits with maple, oak, pine and other graceful shrubbery. This leads to Parley's Park, and was the regular overland stage route before the iron horse made his appearance in these western wilds. Twenty miles up this cañon is Park City, and the famous "Ontario" silver mine. This mine has risen so rapidly in the estimation of experts within the past year that it is really claimed to be only second to the great "Comstock" of Nevada. The "Ontario" produces \$6,500 per day, month in and month out, and declared dividends of \$50,000 per month in gold coin every month of 1877, besides paying for the building of hoisting works, mill, and the usual heavy mining expenses. \$2,000,000 worth of ore were still in sight in January, 1878. In 1877, \$2,195,280.80 worth of silver bullion were shipped. Tourists who cannot visit the mines should drop in at the Wells, Fargo & Co's office, at Salt Lake City, and see the beautiful silver bars which arrive by stage as regularly as clock work every day in the year. Mountain streams here are full of trout; elk, deer and bears are plentiful high up in the ranges surrounding, and there are many marvelously rich mines. A week's jaunt here would be amply repaid. Daily stages; fare, \$4. Hotels, \$2.50 per day, and plenty of cosy rural homes in the Park where accommodations can be obtained still cheaper.

But, eager to view the mountain fastnesses, we "ran away with ourselves" without taking a thorough look at the city. The Tabernacle and unfinished Temple being centrally located, are generally first to be visited. The Tabernacle is 250 x 250 feet, 80 feet to the roof, which is oval and without central support, and there are 20 doors calculated to permit an exit of 12,000 people in six or seven minutes. The great organ, constructed entirely in Utah, and principally of Utah woods and metals, is 58 feet high, and contains 3,000 pipes. We took a three minute walk inside of this mammoth instrument to obtain a correct idea of its size, and must confess to no little astonishment. The Endowment House of which so much has been written, is in the same inclosure. The Temple, near by, was commenced a quarter of a century ago. If ever finished, it will be 200 feet high, of proportionate size, and wonderfully massive build. The granite for this is now carried direct from the quarries to the building by the railway, but for many years the immense blocks, weighing from five to ten tons each, were hauled thither by ox teams. The quarries are some 20 miles distant at the mouth of Little Cottonwood Cañon.

The Museum is just opposite the Tabernacle, and is what it represents to be "Utah at a glance." Mineral specimens from Utah mines, and the products of Mormon industry are worthy of especial notice. Within a stone's throw are the former residences of Brigham Young, "Amelia Palace"—the elegant abiding place of the lady who in later years has been called the Prophet's favorite wife—and the mammoth "Co-op" store. This institution bears the sign, "Holiness to the Lord, Zion's Co-operative Mercantile Institution," as do others

in the city, and mingles a vast deal of business enterprise with its devotion to the Lord. It is 300 feet long, 45 feet wide, three stories high, and crowded with every conceivable line of merchandise. It carries a stock of \$750,000 and pays freight on goods to the amount of \$250,000 per annum. A drive about the city discloses many elegant residences with beautifully laid out lawns, flower and fruit gardens. One can often see in the same inclosure the apple, pear, peach, apricot, plum, grape, and other small fruits thriving luxuriantly. Large rows of splendid business blocks, a fine system of water works, gas and every kind of manufacturing enterprise in full blast, are a few of the evidences we saw attesting the prosperity of the beautiful city. Three daily papers—the *Tribune*, vigorously Gentile, *Herald*, liberal, and *News*, the devoted organ of the Mormon Church, are published here. Four or five railroads really concentrate here, and Salt Lake is to all this great interior basin what Denver is to its grand scope of tributary country. Its resources in mines and farming lands are incalculable, while its exquisite charms for those in quest of health or pleasure are matters of world-wide acknowledgment.

Big Cottonwood Cañon.—A pleasant two or three days' trip off the beaten line of railways, is to Silver Springs, a favorite summer resort in Big Cottonwood Cañon, 24 miles from the city. It is the heart of the Big Cottonwood silver mining district, and is approached by a mountain road which has few superiors for picturesqueness. Silver Lake, five miles from the village, is one of the chief attractions. It is one of the handsomest of all our mountain-locked sheets, has facilities for boating and affords excellent fishing. At Argenta, Silver Springs and Brighton's are quite good summer hotel accommodations. The great Carbonate mine, which is in itself a mountain of ore, yielding as high as \$65 per ton in silver and 90 per cent lead, is located in the neighborhood. Many other good mines are also found here. There are tri-weekly stages; fare from Salt Lake, \$3.

Railway Excursions.—Leading southward from Salt Lake City—a continuation of the Utah Central Railroad—is the Utah Southern Branch of the Union Pacific. It penetrates the best mining and agricultural section of central Utah, and controls the freight and passenger business of the southern part of the territory and southern Nevada, and, with connecting narrow-gauge mountain lines, affords easy access to the finest pleasure grounds. York, 75 miles south, is the temporary terminus. The road follows the thickly settled Jordan valley nearly all the way to Utah Lake, and then continues its southward course through the beautiful villages lying along the eastern shores of that lovely sheet. The giant peaks of the great Wasatch range lie close along the road on the east, so that the traveler has an unending panorama of lake, valley and river on one hand, and of the snow-covered mountain summits and timbered foot-hills on the other. Although the line drains a wide scope of wonderfully productive country on either side, and has already worked up an immense carrying business, an early extension to the great mining and semi-tropical districts of southern Utah will increase the traffic incalculably. During 1877 there were, in round numbers, 100,000,000 pounds of freight forwarded, and 150,000,000 pounds received by this road. Following are stations, distances and fares from Salt Lake City:



DEAD MAN'S FALLS, LITTLE COTTONWOOD CANYON, UTAH.

REACHED VIA UNION PACIFIC RAILWAY, UTAH SOUTHERN BRANCH.



NEAR HIGH BRIDGE, AMERICAN FORK CANYON, UTAH

Stations.	Distance.	Fare.
Little Cottonwood.	7	\$ 50
Junction	12	75
Sandy	13	1 00
Draper	17	1 25
Lehi	31	1 75
American Fork	34	1 90
Pleasant Grove	37	2 00
Provo	48	2 50
Springville	53	2 75
Spanish Fork	58	3 00
Payson	66	3 50
Santaquin	71	4 00
York	75	4 00

Bingham Cañon and Camp Floyd Railroad.—At Junction, 12 miles south of Salt Lake City, this narrow gauge line puts out from the Utah Southern for the Bingham Cañon gold and silver mines, about 20 miles distant on the right. This is one of the most important of the narrow gauge feeders referred to, as it not only brings down more ores than are produced by any other camp in Utah, but also carries up great quantities of miscellaneous supplies for use in the mines. The road carried 127,208,672 pounds of freight in 1877, and as its operating expenses are very light, must be first-class paying property. Bingham station, 16 miles from Junction, is the present terminus of the road, and the mining camp of the same name is strung along the cañon above for a distance of two miles. There are about 2,000 residents whose habitations are crowded closely along the creek, and who seem well satisfied with their possessions in the grand old hills overlooking. This is the oldest gold-mining camp in Utah, and the deep gulches are still paying good wages to claim-owners. About half a million dollars in gold were taken out previous to 1877. Quartz mining is the great industry, however. Many mines are rich in both gold and silver. We explored the underground wonders of the famous "Telegraph" lode, and were astonished by its prodigious dimensions and splendid state of development. Immense timbers supported the weight of the mountain over our heads as we walked through the thousands of feet of worked out "drifts." Here and there the glittering mineral vein was plainly revealed by the light of our candles, and nearly 150 workmen were hammering away at the coveted mass which, in 1876-7, yielded over \$1,000,000. Tramways convey the ore from this and other mines down the steep mountains to the railway, where, by an ingenious contrivance, it is instantaneously dumped into the cars there waiting. It is then shipped to the smelters in the valley, about 20 miles below.

Comfortable narrow-gauge cars convey the passenger to within two miles of the most noted mines, and then he can enjoy a novel ride by mule power on the tramway which zig-zags up the mountains and along the gulches, to the very silver veins themselves. Fare from Junction to Bingham, \$1.

Wasatch and Jordan Valley Railroad.—Thirteen miles from Salt Lake City, on our southern trip, we found Sandy, where this narrow-gauge line branches off into the Wasatch mountains on the left. This is the route to the famous Little Cottonwood mining district, 20 miles distant, where the Emma, Flagstaff, and other mines of world-wide reputation are located. As may be imagined, there is plenty of business for the well-appointed rolling-stock. About 70,000,000 pounds of freight, and 11,500 passengers were carried

during 1877. That readers may judge of the part these little, cheaply operated lines off in the western mountains take in the world's progress, we append a statement of comparative receipts of the Wasatch and Jordan Valley road for the past four years, the capital stock being \$500,000:

For 1874.....	\$38,000
" 1875.....	54,000
" 1876.....	116,000
" 1877.....	150,000
Earnings for four years.....	\$358,000

Trains on all these side lines run in such a manner that the tourist can leave Salt Lake City in the morning, go up into the mountains for from three to six hours, and returning, catch the afternoon train of the Utah Southern, reaching the city again in ample time for supper. This road follows up the Little Cottonwood valley about ten miles, and on into the cañon two miles farther. A prominent land-mark at the mouth of the cañon, and one affording a glorious view of valley and lake below, is Humphrey's Peak, named in honor of Ezra Humphrey, Esq., the superintendent and guiding spirit of these narrow-gauge railroads. Here are also the great quarries which furnish granite for the construction of the Mormon temple.

Two miles inside the picturesque gorge we were transferred to the odd means of locomotion already referred to as the tramway. The passenger cars are open, seat about eight persons each comfortably and look very much like the old-fashioned sleds of the East. The track is laid almost as substantially, and quite as carefully, as that of the steam railway. The engineer is employed with direct reference to patience, sobriety and mule-conquering powers, and must man the brakes as though the coming of the millennium depended upon the result. He is conductor, brakeman, engineer and fireman combined, and his knowledge of tramway details must be such as few average minds can comprehend: All being ready, the whip whistled, the mules brayed, and we were off and *up*. In seven miles we climbed 3,000 feet toward cloud-land. This was through the land of snow-slides, and the track was housed in by substantial snow-sheds nearly the entire distance. Of course the scenery, from our point of view, was not particularly lovely, inspiring, or even interesting, but the inner architecture of our snow-shed was. You may travel round the world, reader, and study styles of architecture with religious devotion in every clime, then wind up your journeyings in this Utah snow-shed, and regretfully acknowledge that you might have here found all of them—yes, a good many more—under one narrow but tremendously long roof. Timbers of prodigious size, stretches of solid masonry on either side, and millions of feet of pine planks were component parts, and they were joined in every conceivable manner. Here our narrow path lay close against the masonry, and our massive roof sloped off abruptly toward the gulch like that of a shed, so that the vast accumulations of snow coming down like lightning from the mountain-tops could slide over us; there our temporary shelter running up sharp like the letter A, and again the structure widening out to quite respectable dimensions. Occasionally we halted to view the devastating effects of the terrible snow-slide which had swept down before the advent of this-great snow-shed. The iron rails had been twisted and doubled as if they

had been the most flimsy wire; trees were uprooted and rendered mere drift-wood in the bottom of the gorge, and monster boulders were intermingled in the general *debris*. Looking 2,000 feet above whence the mountain of snow had come, we could see the clean, narrow path—generally only about 100 feet wide—which had been left from summit to base as a memento and warning. Dozens of miners lose their lives every winter in the Little Cottonwood district, by the awful avalanche, but the secure housing of the tramway has lessened the danger to travel very materially. Of course openings occur here and there, where the lover of sunshine can step out and view the glories of cañon scenery. At each of these one feels amply repaid for the moments of suspense and shadow inside. We should not forget to tell, however, that at some of these points the cañon is so deep and narrow that it is without sunshine for five months of the year.

Among the Silver Mines.—Twelve miles up the cañon we stepped out of our wooden tunnel and looked down upon Alta, the business center of the Little Cottonwood district. The town contains about 1,000 inhabitants; is right at the head of the cañon, and is overlooked by mountains full of rich silver mines. We were on Emma hill, and about 100 yards distant was one of the entrances to the famous “Little Emma” mine, while within a few feet was the tramway down which the ore of the “Flagstaff” poured into the little square box cars.

“The “Emma,” which in its palmy days yielded a million dollars or more, is again being vigorously worked, and residents have great confidence in its soon becoming as lavishly productive as before. We notice that foreign mining corporations are nearly always unfortunate in selecting their managers. The mines are often first-class, but the management notoriously third-rate in point of ability, or else absolutely knavish. Stockholders are thus constantly bled from one cause or the other, and our best mines are called worthless by capitalists across the water. About the next thing we learn is that the property is sold at a sacrifice, bought up by experienced American miners, and straightway pours out its hidden wealth. The “Flagstaff” has produced enough to have enriched two score of men, but we were told has also been made to destroy much London confidence by its unfortunate management. Other great producers here are the “Nabob,” “Alta Consolidated,” “North Star,” and the “Kate Hayes.”

A still more novel affair for the transportation of ore than the tramway, is the “drag,” which is used among the high ranges here quite generally. It is made of a fresh ox-hide, sewn together at the ends, an aperture being left in the middle for the reception of the ore, and looped up with ropes when the “vehicle” is loaded. An iron brake, with long, sharp teeth like those of a rake, is fastened to the tail, and the mule’s traces are connected at the other end. Fifteen hundred pounds of ore can be hauled in one of these over the snow and ice-covered trails of the steepest mountains. We saw these contrivances coming down from the mines in every direction and depositing their loads at the tramway. If from the steepness of the trail the “drag” threatened to slide upon kicking heels, the engineer straightway jumped upon the brake and sank its teeth into the snow. There are few camps which can be more easily visited than Alta. The mines are among the richest in the west, are systematically worked, and present many interesting

features for the eyes of the tourist. A comfortable mountain hotel is found here; rates, \$2 per day. Fare from Sandy to Alta, \$2.

Mule power carried us slowly up; gravitation whirled us and the mules quickly down. The engineer, conductor, brakeman, etc., tied his mules at the rear end of the car, took his accustomed seat and unloosed the brake. If we thought his position responsible before, it was tenfold more so now. The down grade was terrific—at places 600 feet to the mile—and some of the curves were nearly as short as those of a serpent's trail. Heading straight for mountain walls one moment, we were bearing down upon the grotesque walls of human architecture the next. In the one case a sudden parting with the track would have resulted in sure annihilation to us; in the other, some Moorish, Gothic or Roman specimen of architecture would have received a shock which would have broken the heart of its designer. An ore train passed down about the same time. Two cars were always coupled together, and controlled by one man, who sat on the rear one. This seemed an easy solving of the transportation question, and it is indeed wonderful what an amount of ore pours quietly down over this little road in the course of the year. Over 50,000,000 pounds of ore were transported in 1877. Going up requires three hours' time; going down only one—and the down trip to Sandy is over only too soon.

Sandy is the Swansea of Utah. Here are the busy smelters, which feed on silver ores from the mountains and iron ore from the valley. Dozens of stacks point high toward the sky, filling the clear atmosphere with black, sulphur-scented clouds in the daytime, and breathing great blasts of red flame into the darkness at night. Hundreds of grimy men watch the furnaces, and have built up a thriving village by their industry. The different railways are always crowding heaping cars of ore at the platforms, or are shipping away tons of the concentrated bullion. There are about half a dozen of these smelters and sampling works in this vicinity, and they have really only commenced to consume those mountains of ore which rise up so majestically fifteen miles away. Great warehouses full of ores of every grade line the track of the Utah Southern. Splendid farms line the Little Cottonwood above and the modern Jordan below. Thus these widely different interests are stalking along side by side, each stimulating the other by its own needs. At different stages of our journey in Utah we were struck by this admirable facility for exchange. The Mormon farmer at the base of the mountains fills his wagon with potatoes in the morning, is in the heart of a rich mining camp by noon, sells his load and returns to his fertile patch by night. This accessibility reduces operating expenses at the mines to the minimum, and yet enables the farmer to dispose of his produce at good living rates. It is said that expenses of living in the mining districts of Utah are lower, and the style of living better, than in any gold or silver mining region of America. The choicest fruits, the best vegetables, the finest products of the dairy, are found almost within sight of the mines.

Utah Lake.—Seventeen miles south of Salt Lake City is Draper, a pleasant little village in the eastern edge of Jordan Valley. The valley is here some ten miles wide, and thickly studded with orchards, grain fields and neat rural homes. A few miles farther on the road ascends to the upland separating Salt Lake Valley from that of Utah Lake. From different points as we whirled along the brink of this high bench land a scene of surpassing loveliness burst upon us. Utah Lake with all its indescribable beauty of overhanging mountain

tops, rocky promontories and intervening slopes of fertile lowlands seemed to lie directly in our pathway. Where the shore-line is not too rugged on the north and east, Utah's richest farmlands run to the water's edge, and pretty villages lock arms at almost every step. The great southern landmark, Mount Nebo, rising 12,000 feet above the sea, terminates the view southward, and is a fitting sentinel over the enchanting panorama at its base. On the west side of the lake rises the "Lake Range," in which rich silver mines have been discovered. Utah Lake is thirty miles long and about six wide. It is fed by such clear mountain streams as Provo river, American Fork, Spanish Fork, Hobble, Peat-neet and Salt Creeks, its outlet being through Jordan River northward into Salt Lake. Utah Lake is about 500 feet higher than its great northern neighbor. We had now left the valley of Salt Lake behind, and had fairly entered that of Utah Lake.

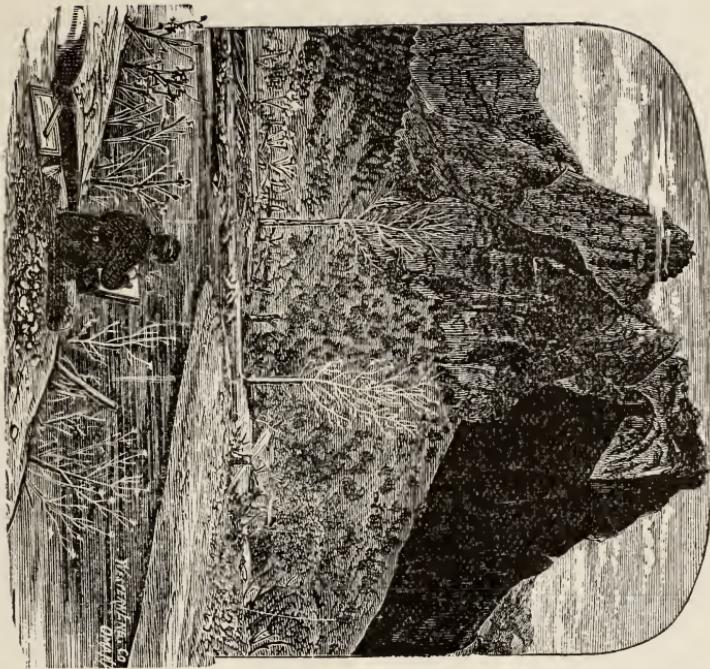
Lehi, 31 miles south of the city, is the next important point passed. It is the center of a fine agricultural settlement numbering 1,500 people. We noticed large quantities of wool, hides and other rural productions awaiting shipment here. West of Lehi 12 miles is Cedar Fork, a village of 200 people. Large quantities of charcoal are produced there. Tri-weekly stages, carrying mails, run thither; fare, \$2.

American Fork, 34 miles, is a thriving farming community, with fine stretches of meadow fringing it and skirting the beautiful lake below. The population is about 1,600, and the people nearly all busy themselves with their fertile farms or fruit orchards. Dried and green fruits are shipped from here by the ton, and great quantities of hay are cured for the northern markets. We learned that American Fork was the first town in Utah to establish free schools. The American Fork railroad here branches off to the noted cañon whose opening lies three or four miles east of the city.

AMERICAN FORK CANON.

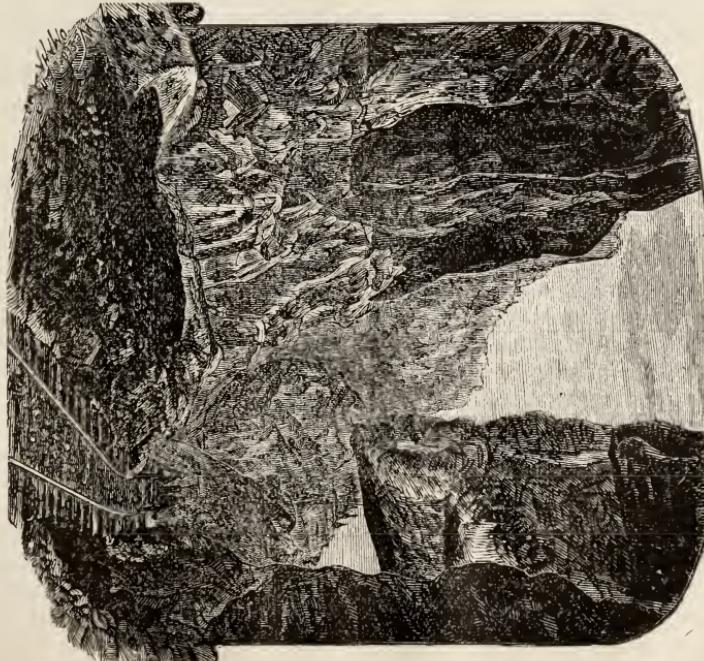
If the tourist can visit but one point in Utah, let him by all means make that one object American Fork Cañon. There is nothing like it accessible from the Union Pacific Railroad, or elsewhere that we know of. Leaving Salt Lake City early in the morning, by the Utah Southern, the visitor reaches American Fork Station by nine o'clock, and finds the little cars of the American Fork Railway, — which are soon to look like toys among the towering walls — ready to commence the mountain trip. The track follows the pretty stream directly toward the mountains for six or seven miles. Entering the Cañon the wildest of all wild scenes bursts upon the eye. The change from the broad valley to the narrow and wonderful gorge comes with such abruptness that there seems to be no middle ground. With further progress the awful height increases, and the fantastic grouping grows indescribably weird. One thousand, two thousand, *three thousand feet!* rise the pine-crowned battlements until the eye is fairly strained with searching out the glories of the summits.

The coloring of the rock strikes the observer no less than their ever-changing forms. A very deep red and brown are the prevailing shades, but these are varied, brightened, intermingled, until we fancy a kaleidoscope of colors, as well as of figures. Here the red pales to a beautiful pink; there the shadows deepen it to a royal purple, and tracings of the huge



LITTLE ZION VALLEY, SOUTHERN UTAH.

REACHED VIA UNION PACIFIC RAILWAY, UTAH SOUTHERN BRANCH.



HANGING ROCK, AMERICAN FORK CANON

rock yonder are almost black. Heat, intense heat, has melted these grand old mountains, and awful convulsions have thrown and twisted the molten mass into some of the mightiest walls and most wondrous formations known in all the Rockies. Lest we may be called too enthusiastic we give place for the outburst of a fellow-visitor: "The cliffs on either side rise 3,000 feet above the torrent which roars down beside the railway. Such cliffs! Such rock formations! The strain of the rocks twisted, gnarled, distorted into every conceivable shape. Here is a mass seeming like the fibre of some colossal tree which lightning had taken hold of and wrenched and burned to a ghastly cinder; there a huge overhanging mass, weighing millions of tons, composed apparently of segregated fragments, all threatening to fall and ruin. High up in the air crests and ridges of limestone and granite assume the strangest forms. Towers, battlements, shattered castles and the images of mighty sentinels exhibit their outlines against the sky. Where the rocks do not deceive the eye with fantasies they are stained with rich, stern colors, like those which adorn the cliffs which rise above the profound abysses of the great Colorado ravine. Eyries of eagles are pointed out by the conductor, and there up high above the loftiest crag soars an eagle, scanning with contemplative eyes the little railway train struggling up the Cañon 5,000 feet below his flight. Some eight miles from the mouth of the Cañon, and 3,000 feet above its bed, there is an arch through the rock at the summit, on the north side, through which the blue sky is seen. This arch, called the Devil's Eye, seems about as big as a man's head. It is fifty feet high and eighteen feet wide. Over it stands a tree, which appears like a stunted bush; it is seventy-five feet high, and its topmost branches are favorite perches of eagles."

Half way up the Cañon the baby train passes under Hanging Rock. It is literally a mountain of rock projecting out toward the stream twenty feet beyond the perpendicular. Looking upward out of the window, opposite the rock, we could see its edge covering more than the width of the track, its millions of tons of weight threatening to grind such frail work of man to powder. Under an immense mass of granite, to the right, was a cave that looked as if it might have been carved by the chisel of some Titan of past ages. Opposite was a colossal amphitheatre with walls on three sides, 2,000 feet high, its arena crowded with nature's gladiators, bold crags and flinty points, and its heaven-piercing summits richly clad with the evergreen pine and spruce. A feature welcomed here is the luxuriant vegetation, which in other cañons is so often totally lacking. Jagged walls and other formations which need toning down, are often clad with richest verdure. Here and there, under the shelter of overhanging rocks, were the camps of enthusiastic visitors. Often we leaped the beautiful torrent by a spanning bridge; then soon again found the crystal waters washing our solid parapet. The track was crooked, as are most railways in the mountains, and just when we least expected it, some vista of entrancing beauty and splendor would suddenly burst upon us. Among the figures resembling the animate was one looking like a gigantic lion, not "ready for the leap," but reposing gracefully on his royal pedestal five hundred feet above, like the king of beasts alone can. Beautiful springs send their clear waters over the rocks and under the ferns and cresses to the creek at different points. Deep, dark eddies which we know are full of trout, noisy cascades over shelves of rock, and often masses of richest foliage shading the more quiet depths, are features of

"American Fork," which will come back to us for years with the most delicious zest.

Nearing the head of the Cañon we passed the "Old Mill." The wilds in this case only needed such a musty and decayed old monument to set off their glorious charms. We passed at the base of a high dome of rock with the tottering, moss-covered frame of the old saw-mill on our left. A mass of verdure and network of undergrowth creeps over the foundation, graceful trees crowd around, and the stream here mingles its sweetest ripple with the sighing of the pines among the rocks above. The loveliness of this scene defies, yes shames, description, and we doubt if another in all the west appeals more strongly to the admiration of the lover of nature.

The mountains now lessened in size and grew less rugged. Soon we reached Deer Creek, 16 miles from American Fork station, and the terminus of this grand piece of railway engineering which enabled us to pass up through the magnificent panorama in two hours. We had ascended 5,000 feet in sixteen miles, or at the rate of over 300 feet to the mile. At Deer Creek a sawmill was turning out 8,000 feet of lumber per day, and ten charcoal kilns were producing 3,000 bushels of fuel per day for the smelters below. The mountains above are full of silver mines. One of these, the "Miller," was at first so wonderfully rich that the American Fork Railway was built at an expense of \$400,000, purely to carry out the stream of rich ore, and to assist in the development of other mining enterprises. The vein is not worked so vigorously as in earlier years, and the builders of the road perhaps little thought of the thousands of eager pleasure seekers who were to soon pronounce its pathway one of the finest in the world. But other mines are being worked near Deer Creek, and the interest is growing in importance so rapidly that the product of these will soon give the road all the tonnage its projectors had hoped for. The "Wild Dutchman," "Silver Lake," "Pittsburgh" and "Bullion" are the prominent mines developed.

The descent of the Cañon is even more sublime than the upward trip. Our locomotive was left behind, and we finished one of the grandest rides of our lives simply *by the power of gravitation*. Going up, the pant and effort of the powerful little locomotive, the hiss of steam, and rattle of wheels, alone attracted our attention from the ever beautiful surroundings. Coming down even this feature was missed. Gliding quickly downward, we made our way so noiselessly that even the birds could know the difference, and greet us with greater freedom. Round the curves, over the rushing waters, and amid all those indescribable byways, we silently descended. Passing in review that multitude of attractions, which had been so admired from below, we confessed that all was again new, and that the only way to thoroughly appreciate cañon scenery was to watch with all eyes *while going down*. We caught our best views of Mount Aspinwall—a splendid landmark to the south—on our downward course. And we spied out hundreds of fascinating camp-grounds, inviting little groves, and glorious points of view for those who like to climb, on that exciting plunge to the valley. Mountains all looked higher, the Cañon deeper, and the grade far more precipitous, than when gazed at from below. No less a personage than the late Canon Kingsley, of England, pronounces this locality "the rival of the Yo Semite," and another great traveler, in speaking of the downward trip through the Cañon, says: "It is the grandest of all railway scenes the tourist will ever witness."

Arriving at American Fork station in time for the north-bound train of the Utah Southern, visitors reach Salt Lake City in time for supper. Excursion tickets are sold from Salt Lake City to Deer Creek and return at \$3.50. A comfortable hotel is found at American Fork Station; rates, \$2 per day.

Now again southward over the Utah Southern. Still keeping the silvery sheen of the great fresh water lake in full view on our right, and the rocky heights of the Wasatch overlooking on the left, we soon passed Pleasant Grove. It is another of the many pretty rural pictures found everywhere in Utah, and the small collection of homes is almost buried in the foliage of box-elder, locust and cottonwood. A fight which settlers had here at an early day with Ute Indians had given the place the name of Battle Creek, but that title has long since been abandoned.

Great Irrigating Enterprises.—Proceeding southward again from American Fork station, we crossed a ten mile stretch of comparatively unsettled valley lands. These, and thousands of acres more of lands as rich as any in Utah, are soon to be utilized, as great irrigating canals are being led from the head of the Jordan (its point of exit from Utah Lake) out over the high bench lands and along the Wasatch mountains, for a distance of 25 miles toward Salt Lake City. A canal 25 feet wide and 30 inches deep is being taken out on each side of the river, covering some 50,000 acres of hitherto worthless lands and rendering them abundantly productive:

Provo.—48 miles south of Salt Lake City is Provo, the commercial and manufacturing center of Utah Valley. It has a population of 4,000, and is beautifully located on the south side of Provo river near the base of the mountains. The woolen mills here are the most extensive between the Missouri River and the Pacific coast. There are four large buildings belonging to one corporation which, with the machinery, cost \$250,000. 3,240 spindles and 125 looms in this institution consume 2,000 pounds of wool per day, and in 1877, the net profit was \$50,000. Yarns and woolen goods of superior quality from these mills go to all parts of Utah, and are worn by the Mormon farmer and Gentile miner alike. There are also three extensive flouring mills, sawmills, and other manufactories here, all utilizing the splendid water power afforded by the river. "Brigham College," founded and endowed by Brigham Young, is one of the most noticeable public institutions. Hotels are small here, but afford very good accommodations at from \$2 to \$2.50 per day.

Provo Cañon.—One of the finest drives in all Utah is that of Provo Cañon. Provo river has a most singular exit from the towering Wasatch range, six miles east of the city, and its course above is little less attractive. From the splendid carriage road, which curves gracefully under the cañon walls far above the stream at the entrance, the rocks on either side look as if they mig' t have once been giant buttresses of solid masonry, formed by human hands, and offering no possible outlet for even the tiniest rivulet. It is not hard to fancy that the mountain torrent which now so grandly fills the gash, here gathered all its strength and with one wild sweep burst through, carrying fertility and beauty to thirsty lands below. Passing upward, the road is always in sight of the stream—sometimes cut in the mountain side and often following at the water's edge. Alternating with the deep and narrow defiles are numerous little park-like openings, which seem especially designed for the noonday lunch, or the more permanent camp ground. As the cañon walls sometimes rise per-

pendicularly 1,500 feet, there is wildness and beauty combined and richly lavished within the smallest bounds. Eight miles up the Cañon is a series of half a dozen exquisite falls. These drop from twenty to twenty-five feet each from ledges of rock into basins they have long since worn smooth and wide. The lower one, the "Bridal Veil," is alone an entrancing sheet, the entire volume of the river descending in a broad, regular body and covering the dark granite below with flakes of foam. We are told of a side cascade of 1,800 feet, which must be a rare attraction. Trout are very plentiful. Heber city, 20 miles from Provo, is reached through this cañon. It is the centre of a large and flourishing agricultural community in the upper Provo valley.

Three miles from Heber city are found a group of hot wells which form a great natural curiosity. There are about fifty of these wells running from five to fifty feet in diameter. The waters, as they have been forced out at the top, have formed wonderful rims of limestone from 20 to 100 feet in height. In some of these, water of beautifully varied tints can be seen rising and falling as though propelled by a mighty force from below. Sticks thrown into the water are speedily encrusted with the lime and other substances held in solution. Several of the wells are dry and so great is the deposit of lime in one of these that a kiln, fifty feet in diameter, is utilizing the product. The country surrounding abounds in fish and game, and is well worthy the visits of tourists. Good accommodations are found in several villages, and almost everywhere among the thrifty farmers.

Springville.—53 miles from the city, is a village of 1,500 inhabitants, and named from the immense warm springs which flow from the cañon near by. An enterprising miller utilizes the water from these springs to run his flouring mill, and when his neighbors' wheels are locked by hard freezing he pushes right along. Just back of the town is the pretty Hobble Creek Cañon, which gets its homely name from the earliest Mormon explorers who camped one night, some thirty years ago, between its romantic walls, and found a pair of old Spanish hobbles. A fine vein of coaking coal is found in Pleasant Valley, 40 miles distant through this canon. Large quantities of coke are hauled to the railroad here and are shipped to the smelters, near Salt Lake. A railroad is projected to the mines, and seems to have a pretty even chance of reaching them within a year or two. Springdale is one of a perfect belt of villages which lie beautifully at the base of the mountains, and along the eastern shore of Utah Lake. The country is rich in grain and fruit farms, and the inhabitants are to be envied their cosy homes amid such lovely scenes.

Hunting and Fishing.—All along this shore line are points of rendezvous for disciples of the gun and rod; but Spanish Fork, a town of 2,000 inhabitants—situated on our line, 50 miles south of Salt Lake City—seems to be preferred by the sportsmen. Spanish Fork River empties into the lake near here. Duck hunting among the reeds and along the banks of the lake two miles distant is simply unexcelled, and trout-fishing in both lake and river is superb. The lake is full of five-pound trout—ten-pound trout are not strangers in its translucent depths—and the river swarms with the smaller though none the less gamy kind. Suckers and other fish are also very plentiful. Spanish Fork hotels entertain very acceptably at about two dollars per day.

A large dairy for the manufacture of butter and cheese is located near Spanish Fork. It has been in operation two years, on the co-operative plan, and

proves a thorough success. The pure atmosphere, cool nights, and splendid springs of ice-cold water are auxiliaries found everywhere along the Utah mountains, and render the manufacture of such articles an easy task. Readers may wonder what we mean when we say that within the confines of the town 100,000 bushels of wheat were raised in 1877. These are towns of stone-walls and cornfields, of orchards and potato patches, of mingled cow pastures and business blocks—at least that is what a Yankee with an eye to rural industry would call them. In passing round the corner from your hotel to a dry goods store you can at different points save time and distance by cutting cross-lots through a corral or two; and then, if you have an unconquerable desire for such "plunder" as squashes, melons, tomatoes, or the different varieties of fruits, a well-tilled truck patch awaits you across the way. This variegated manner of arranging things continues from the Mormon Tabernacle, in Salt Lake City, to the furthermost corners of populated Utah. On the table lands above Spanish Fork grapes are produced by the ton, and the manufacture of wine is carried on to considerable extent.

Payson, 66 miles, is a town of 2,000 inhabitants, located near the south end of Utah Lake. It is also a strictly agricultural community. Three miles farther south and a little to the left of the road is a pretty and enterprising little place, called Spring Lake Villa. It is cosily nestled under the very shadow of the mountains, by the side of the small lake which gives it name. The villa is noted for its fine fruits, large quantities of choice apples, peaches, pears, grapes and other small fruits being produced. Quite an extensive fruit-canning establishment is located here.

The Tintic Mines.—Santaquin, 71 miles, is the principal forwarding point for the Tintic gold and silver mining district. Here, as well as at numerous other stations, we noticed the large warehouses of the Utah Forwarding Company, a corporation which has its chief office at Salt Lake City, and does an immense carrying business, reaching out to the furthermost settlements and mining camps of Utah. The Tintic mining district is located in the Oquirrh mountains, about 15 miles west of Santaquin, and covers an area of 150 square miles. It is a literal store-house of mineral wealth from center to circumference. Average assays of ores from thirty leading silver mines made during December, 1877, exhibited a value of \$75 per ton, and many specimens of gold and silver ran as high as \$2,000 and \$3,000 in value per ton. Six mills and smelters are in operation in the Tintic district. Thirty-five stamps are pounding the silver and gold from "free-milling" ores, while millions of pounds more of the material which must be smelted are annually shipped to the northern smelting works. Vast deposits of hematite iron ores are found near the mines of precious metals, and at present are largely utilized for "fluxing" with silver ores at the smelters. Over 20,000,000 pounds of this were shipped to the Sandy smelters over the Utah Southern, in 1877. Copper ore of good grade is also found near the same district. Tri-weekly stages run to the different mining camps. Fares and distances from Santaquin are as follows: to Goshen, 6 miles, \$1; Diamond City, 13 miles, \$2.50; Silver City, 16 miles, \$2.50; Eureka, 21 miles, \$3.50.

SOUTHERN UTAH AND NEVADA.

York.—Seventy-five miles south of Salt Lake City is the temporary terminus of the Utah Southern, and therefore the great transfer and forwarding point for the southern Utah, Nevada and northern Arizona trade. Large trains of covered wagons were seen approaching and departing, and the real old Concord coach again appeared in its most useful sphere. Over 10,000,000 pounds of freight were sent northward from here during 1876, and the showing of south-bound freights was equally gratifying. It is plain to see that the railway here already grasps at the wealth and plenty of the great southwest. It is just at the threshold of a sunny empire, and needs but cross to reap the full reward.

The people of Utah seem to take most pride in the semi-tropical southern half of their territory, and firmly believe that all the vast trade of that region and of the best silver and gold regions of Nevada and Arizona will flow northward over their railroads to the Mormon capital; or, carrying it a little farther, that all the southern border there will certainly be made tributary to the north and east by the extension of the Utah Southern Railway, rather than to the western and southwestern coast. With due deference to Pacific coast enterprise, we all realize that Eastern commercial centers supply the continent. The bulk of merchandise, mining supplies, etc., for the rich mines of southern Nevada formerly went past Salt Lake City westward 300 miles; then south and southeast by indirect roads all the way from 250 to 400 miles more. Since the opening of this direct route to the northeast, however, by which some 200 miles in distance are saved, travel and trade have, to a large extent, been turned to the natural channel. A glance at any map of the continent also enables us to see that with the extension of the Utah Southern the same rule will apply to the great Arizona region. Instead of going westward from Ogden 900 miles to the Pacific coast, and then southeastward 800 miles more to the Arizona settlements, by lines now established, the travel or freight traffic will turn directly southward via the Utah Central and Utah Southern Branch of the Union Pacific, and reach the same points in a thousand miles less of distance. Indicating the directness and other natural advantages of this route is the fact that the government has already established mail service from St. George, in southern Utah, southward along the Colorado river, to Hardyville, Camp Mohave, Ehrenburg and Yuma, in Arizona.

Large quantities of cotton are already produced under the warm skies of southern Utah, and manufactured into the coarser fabrics by the same unskilled hands which till the fields. Tobacco, rice, almonds, pomegranates, figs, grapes, madder and indigo, with most cereals and vegetables, are among other leading productions in this favored clime. The valleys are not very extensive, as a rule, but are numerous and exceedingly fertile. Stock raising has become an important branch of industry. Washington and Kane counties are small kingdoms in themselves, taking up nearly all the territory known as "Southern Utah." They contain about fifty towns and settlements, which are noted for their fine fruits and manufactures of woolen and cotton yarns and fabrics, leather, boots and shoes, syrups, wines, raisins, castor and other oils and medicines. About every shade of temperature and climate are represented in the different localities, from 114° in the shade to icicles in midsummer. Hunting is excellent everywhere in the mountains, and trout streams abound in all sec-

tions. Some of the smaller valleys are perfect little gems of loveliness and fertility. Among the nooks particularly rich in natural attractions is Little Zion Valley, which lies near the north fork of the Rio Virgin river, and a few miles east of the St. George Stage Line. The admirable view on another page is only one of the hundreds equally beautiful to be obtained in that romantic locality. Rockville and Zion are the nearest villages of note, and can easily be reached from Bellevue and other points on the stage road.

Mining along this southwestern route is an industry which must assume great proportions in the very near future. Silver ores are found in the mountains on the right at almost every step. Prominent among mineral regions now partially developed are those tributary to Beaver, 150 miles southwest of York. The "San Francisco Silver District" is one of these. Some of the mines in this district are veritable bonanzas, and have already paid for the erection of mills and smelters. The "Horn Silver" is the name of one of these immense deposits. Its vein has been thoroughly prospected for a distance of 300 feet, revealing a solid ore body 50 feet wide and thus far known to be 200 feet deep. Eight thousand tons of ore have already been taken out and worked, revealing no sign of exhausting the supply. The mineral yields from 40 to 70 ounces of silver to the ton. Running through this immense vein are streaks of "horn silver," worth from \$1,000 to \$2,000 per ton. The "Elephant," which yielded \$30,000 in six weeks, the "Hidden Treasure," "Rebel" and "Uranus," are other noted mines. Such sub-districts as the Picacho, Rocky, Star, Pine Grove and Granite, all within easy reach of this route, are full of miners and prospectors, and are shipping hundreds of tons of ore every month to the north and east. The number of mineral locations run up into the thousands. Silver ores from many large mines average 50 ounces of silver per ton, and 45 per cent lead, while many in addition yield from \$5 to \$20 in gold per ton. In the San Francisco District large smelting and reduction works have been completed, and others are being built. On the strength of these great mines two towns—Frisco and Grampian—were being rapidly built late in 1877.

The mines continue to occur at short intervals southward into Arizona, and westward into the great silver belts of Nevada. Leeds and St. George, in Southern Utah, are the prominent centers for that region. The Leeds or Silver Reef mines have recently become widely famous for their richness and extent. Not only do gold and silver abound in these districts, but copper, iron, coal and lead exist in immense deposits at various points. The silver ores are often easily reduced by stamp-mills. The mills in Leeds district pounded out a product of 400,000 ounces of silver in 1877. Miners are everywhere praying for the extension of the railway, and even the most conservative ones are so extravagant as to declare that the mining industry will alone pay a railroad's running expenses. It will be many years before sufficient smelting and reduction works are constructed at the mines to consume the ore produced, and the richest ores will for a long time be transported north to Salt Lake City or to Omaha. The tonnage of ores now forwarded is no criterion of what it would be should the railroad extend to within 50, or even 100, miles of the best mines, because the wagon transportation is so expensive now that only the very richest ores can be shipped with profit. Following is a statement of distances on Gilmer, Salisbury & Co's daily stage line south from York, together with

passenger and *express* freight tariff. Mule freight to Beaver is about one cent per pound, to St. George about two cents :

From York to	Miles.	Fare.	Freight.
Nephi.....	16	\$2 00	2 cents.
Chicken Creek.....	30	3 75	2½ "
Round Valley.....	55	7 00	3 "
Fillmore	80	10 00	4 "
Corn Creek.....	92	12 50	5 "
Cove Creek.....	123	15 00	6 "
Beaver.....	152	18 00	7 "
Buckhorn	174	23 50	8 "
Parowan	189	25 75	9 "
Summit	195	26 50	9 "
Cedar City	209	28 00	10 "
Harmony.....	231	31 50	12 "
Desert Springs.....	279	38 25	13 "
Pioche, Nevada.....	321	40 00	15 "
Via Harmony to Bellevue.....	245	33 50	12½ "
Leeds or Silver Reef	258	35 00	12½ "
St. George.....	276	37 50	14 "

The Utah Western Railway.—Returning to Salt Lake City, we made a trip out to the shores of Great Salt Lake, 20 miles, and on to Stockton, 37 miles from the city. As its name would indicate, this narrow-gauge line has a general western course from the city, and is calculated to develop the rich mining regions and agricultural valleys in that direction. It skirts the extreme southern shore of the lake, and then turns a little to the south, along the western base of the Oquirrh mountains. As it is the regular line for all pleasure travel to the lake, and extends to within a few miles of the best mines of Stockton, Ophir and Rush mountain districts, it takes a very important part in the carrying business of Utah.

Crossing the Jordan near the outskirts of the city, the road enters a stretch of uncultivated prairie 12 miles wide by about 50 long. Herds of cattle and sheep alone utilize these rich bottom lands, as something has prevented such a lavish use of water for irrigation as we saw almost everywhere else in the territory. We were informed that canals could easily be led from Utah Lake, or the Jordan, over all this broad area, and no doubt such enterprises will soon be under way. This plain or flat, sometimes thickly covered with sage brush, is the "jack" rabbit's paradise. About every sage bush claims its rabbit, or *vice versa*.

Millstone Point, 12 miles from the city, is the first station. Here the enterprising millers who first ground Utah wheat quarried their mill-stones. A few miles distant are some large hot-springs of clear water. Three miles west of the station, near the track, is a cave, whose romantic precincts are made to answer for a corral and shelter for a large herd of sheep. Having rounded the northern extremity of the Oquirrh range, the great Dead Sea, with its grand shore-line of rugged mountains and its beautiful islands, came into full view on the right. Passing Black Rock station, named from a dark-colored rock rising high out of the lake, about 100 yards from the shore, we soon arrived at

Lake Point, 20 miles from the city, which is the resort for the thousands of pleasure-seekers who flock to the lake every season. Here is the "Short Branch Hotel," which has every convenience for the accommodation of visitors, and

from whose wide balconies we obtained a glorious view of the lake, its surrounding mountains and its rocky islands. We should also mention that there is a hotel at Black Rock. It is but a few yards down to the gravelly beach, where are bathing-houses, a wharf and the boats. The steamer "General Garfield" is always ready here to take pleasure parties on a delightful cruise out over the clear waters and among the beautiful islands. The steamer, at times, has other occupation, too, for the islands and the west shore are rich in minerals, and large quantities of ore are transported from them to this point. Pleasure travel to the lake is rapidly increasing, both on account of the fine scenery thereabout and by reason of the unrivaled salt-water bathing afforded. Thousands avail themselves of the low excursion rates of the Utah Western, and enjoy a novelty which the whole world outside does not afford—a delightful plunge into salt water midway between oceans, and at the same time breathing the finest mountain atmosphere in all the land. In these waters you cannot sink, and the tonic and invigorating properties have been demonstrated to be far superior to those of the lighter fluids of the ocean. Giant's Cave, from which we obtained exquisite specimens of stalactites, is a noteworthy attraction near by.

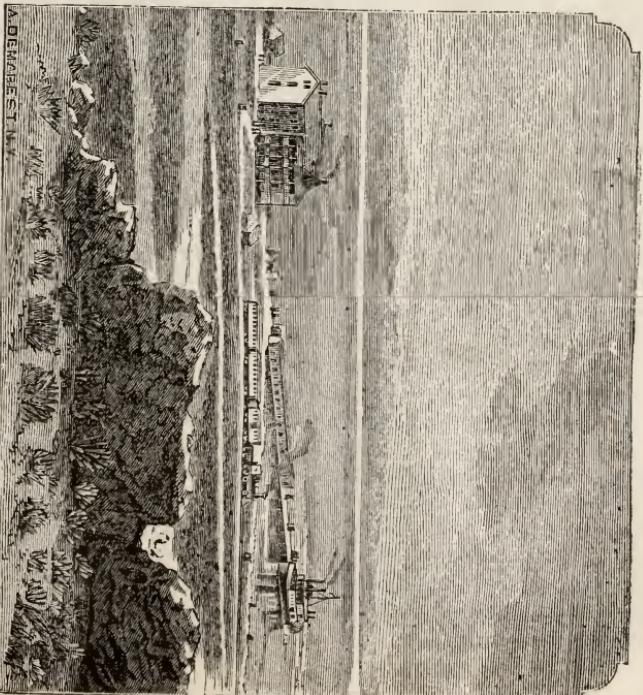
The Great Salt Lake stretches off northward 80 miles, is about 50 miles wide, and lies 4,200 feet above the ocean. The Oquirrh mountains rise high above the hotel just in the rear; the west mountain range borders the lake on the west, and far along the northeast shore runs the grand Wasatch range. Promontory mountains jut far out into the lake from the north, the whole forming a shore-line of singular beauty and magnificence. Antelope, Stansbury, Hat, Gunnison, Kimball's, Carrington and Church are the principal islands. The mountains in some of these appear to belong to the same ranges which form the shore line and nearly all contain deposits of either the precious or base metals. On Carrington and Church Islands, in the southern part of the lake, are immense beds of slate and rich copper deposits. Numerous herds of wild horses, different kinds of game and many domestic animals are also grazing in these romantic localities. The waters of the lake have risen a dozen feet since the earliest settlement of Utah.

The wonderful density of the Salt Lake waters has long since attracted the attention of Yankee enterprise. Large crystallizations of pure salt are often gathered on the shores of the mainland and islands, and in these later years it is found that four barrels of water evaporated produce one barrel of coarse salt. The utilization of this vast salt mine being such an easy matter, several firms are busily engaged in the work. The old way has been to dam off the waters of a shallow inlet from those of the lake; these, averaging four feet in depth, would be entirely evaporated in three months, leaving a crust of salt on the beach of from one to three, and at rare intervals, six inches in thickness. The finest salt would always be found in the deepest portion of the inlet where the water remained the longest. The product was gathered up and marketed without further manipulation. However, the leading firm, Messrs. Lawrence & Burgess, have now erected immense vats close to the lake, but eight feet above it. The water, after being pumped into these, is controlled to better advantage than in the old way, and the salt saved is white as snow—said to be as fine as the best Syracuse dairy salt—and is becoming a leading article of consumption all over the West. This firm manufactured 6,000 tons of the different grades of salt in 1877, and other firms 4,000 tons more. Of these 10,000 tons, much was left in its coarse,



BLACK ROCK, GREAT SALT LAKE.

REACHED BY UTAH WESTERN RAILWAY, VIA UTAH CENTRAL BRANCH OF THE UNION PACIFIC RAILWAY.



LAKE POINT, GREAT SALT LAKE.

native state, and shipped to the smelting works of Nevada, Colorado and Montana. Colorado alone consumes 5,000 tons annually, and this will undoubtedly be supplied from the inexhaustible beds of the great lake, now that the Colorado Central Branch of the Union Pacific Railway affords such direct access to the consumers there. This Salt Lake product is especially sought by smelting companies, for the unusually large percentage of chlorides it contains—only 3 per cent of moisture and impurities are held in solution. Salt here sells for about \$6 per ton on the cars, and can be placed upon the railroad for less than can the same quality be manufactured at any other point in the Union. With a now very large and constantly growing consumption, and these unequalled facilities for production, we may soon expect to see many factories crowding the lake-shore, and an industry worked up, which will add immensely to the territory's wealth.

Skirting the southern shore of the lake, the Utah Western passes "Half-Way House," 25 miles from the city, Tooele, 31 miles, and makes its present terminus two miles from Stockton, at the southern rim of Salt Lake Valley, or 37 miles from the city. After leaving Lake Point, the traveler notices many fine farms on the left, and near the "Half-Way House" are busy flouring and woolen mills whose wheels are turned by the waters of large springs, which gush out near the station. Ten miles to the west is Grantville, one of the most thriving agricultural towns in Utah.

Stockton and the Mines.—Stockton is pleasantly situated in the northern end of Rush Valley, adjacent to the great mines in the Oquirrh range, and is a prominent center for the reduction of ores of the district surrounding. The first discoveries of silver in Utah were made near here. Three smelters—one of them the pioneer of the territory—are here busily at work, and the visitor can always see huge piles of bullion at their store-houses, or at the depot, awaiting shipment. There is a population here of 600. Stockton Lake, a pretty little gem in the mountains, near by, has a singular history. Local historians informed us that thirteen years ago the lands it now covers were broad, waving meadows, but through some strange freak of nature the crystal waters came, and the inhabitants woke up one morning to find a lake four miles long and a mile wide nestled down in the center of their fertile valley.

The mines are not located in the highest mountains here, but in a range of low hills which skirt the town on the east. The "Argent," "Great Basin," "Silver King No. 2" and the "Quandery," were the principal producers of silver ores in 1877. The "Silver King No. 2" shipped 2,500 tons of ore, which assayed \$10 per ton. The ores from many of these mines are concentrated into what is known as "base bullion," at the local smelters, and then the silver and lead product is shipped to Omaha or elsewhere for separation and refinement. About twenty mines were raising ore during our visit, and the smelters have more than they can do to use up this product. The "Waterman" and "Chicago" are the principal smelters. Their product for eight months of 1877 was, in round numbers, 210,000 ounces of silver, 530 ounces of gold and 6,000,-000 pounds of lead. The Stockton mines excel almost all others in Utah for their accessibility, and freedom from storms in winter. The altitude is less than that of any Utah mining district with which we are acquainted, and snow seldom falls to a depth of six inches. Good wagon roads lead from the terminus of the Utah Western Railway to all the mines. Over these the visitor can see

ores transported every month in the year. The hills are so agreeably rounded and well covered with grasses, that herds of cattle, sheep and horses can be seen grazing in the midst of the mines—a sight not often afforded in mining regions. Ores can be transported from the different veins to Salt Lake City at a total cost of \$4 per ton.

Southward from 10 to 20 miles are the Ophir, Dry Cañon and Camp Floyd mining districts, possessing many rich properties, and being directly tributary to the Utah Western via Stockton. From Stockton there is a daily stage line to Ophir City, Jacob City, Rush Lake, and other localities worthy a visit. Fares from Salt Lake City, on the Utah Western, are, to Lake Point, 20 miles, \$1.25; Half-Way House, 25 miles, \$1.50; Tooele, 29 miles, \$2; Terminus, 37 miles, \$2.25. Excursion tickets are sold from the city to Lake Point and return, at \$1.25, and special excursions are formed weekly, in summer, with the fare reduced to from 50 cents to \$1.

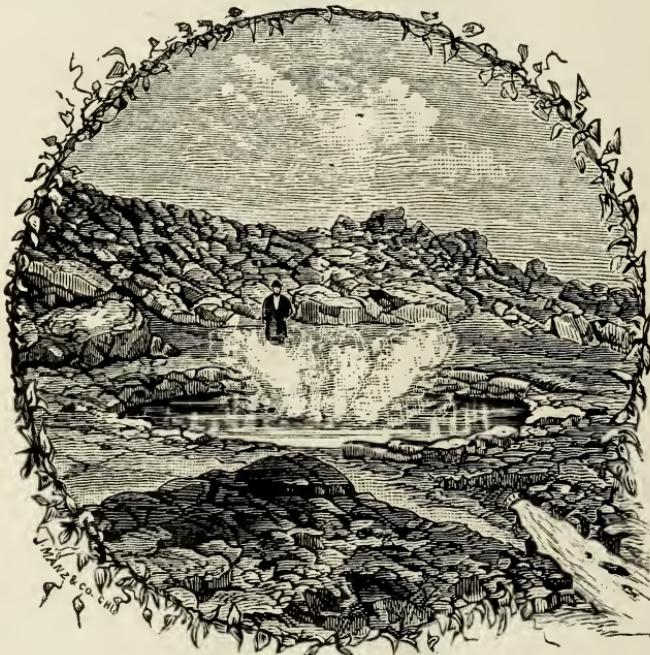
CHAPTER VI.

NORTHERN UTAH, IDAHO AND OREGON.

The Utah & Northern Branch of the Union Pacific Railway.—The longest and most important narrow-gauge line west of the Rockies, is the Utah & Northern Branch of the Union Pacific. It turns northward from the great overland line at Ogden, follows along the western base of the Wasatch range, through the richest counties of Northern Utah, and has for its temporary halting place Eagle Rock, Idaho, 206 miles from Ogden. This line was not only intended to complete Utah's admirable railroad system, but also to reach far to the north, penetrate the mining regions and settlements of Montana, to thoroughly drain the mountain-locked Territory of Idaho and find a way to the Pacific Ocean over those empires of the great Northwest, Oregon and Washington. The enterprising people of Northern Utah undertook the enterprise in 1871, and struggled bravely along with it for four or five years, when the Union Pacific Railway Company consolidated it with the interests of that great road. With such men as Mr. Gould at the helm, the scheme could not lag, and we now find it going forward with a vigor unknown before. The headquarters of the Utah & Northern are at present at Logan, and George W. Thatcher, Esq., is General Superintendent.

As the road leaves the inviting suburbs of Ogden, it crosses Ogden River, which is here lined with beautiful groves and alternating meadows. The same great Wasatch range which we so pleasantly followed to the southward here rises closely on the east, and Salt Lake affords some of the finest views on the west. Six miles from Ogden, close up under the shadow of the mountains, is the thriving village of North Ogden. A few miles farther on the road enters a little belt of land, three miles wide and five long, which is called the "Garden-spot of Utah." The lands slope gently from the base of the wonderfully rugged mountains to the lake shore, the yellow wheat fields meeting the green meadows half way, and the fruit orchards often shading the railway track. The choicest

apples, peaches, pears, apricots, and all small fruits, are produced here with great regularity, year after year. Forty to sixty bushels of wheat per acre is a common crop here, and the farmer with his little field of ten acres points to better results than he who cultivates twenty in the best Middle States. Splendid stone fences mark farm boundaries almost everywhere, and with the excellent farm buildings, well-cultivated fields and thrifty orchards, present an appearance at once of stability, wealth and plenty. Improved lands in this little belt and adjoining on either side are held at \$100 and upward per acre.



UTAH HOT SPRINGS, NEAR OGDEN.

The Utah Hot Springs.—Eight miles from Ogden, clustered at the base of a rugged spur of the Wasatch range, are some mineral springs of great volume, and reputed to possess rare medicinal virtues. The water pours from crevices in the rocks, registering a temperature of 125°, and containing such ingredients as chloride of sodium, iron, magnesia, and nitre in strong solution. Baths here prove remarkably invigorating, and seem especially adapted to the cure of rheumatism and kindred chronic troubles. As is seen by an accompanying illustration, a large pool has been neatly walled up. These walls and the pebbly aisles surrounding, through which other springs send their waters to the great salt sea a few hundred rods below, are coated with a pretty, reddish mineralized substance. A capacious pipe leads a large quantity of the water 800 feet farther down the valley, passing under the Utah & Northern track on its way, and finally pouring the medicated fluid into the commodious and well arranged bath-house. The improvements consist of a neat little hotel, two plunge

baths, 16 by 20 feet, with nicely furnished dressing rooms attached, a number of smaller rooms fitted up with the ordinary bathing-tanks, and also a very pleasing feature in the way of an open lake 160 by 160 feet, from 3 to 5 feet deep, filled with the same hot spring water, and to be used for both swimming and boating. Good beds and a tip-top table are provided regular guests at \$10 per week, with baths included; baths alone are only 25 cents each. Boats and bathing suits are at hand for use on the lake. Hot Springs is a regular station and postoffice on the Utah & Northern, and through the efforts of Dr. R. H. Slater—the proprietor of the hotel and springs—seems destined to soon be one of the most popular resorts in Utah.

Willard, 14 miles north of Ogden, is without doubt the most beautifully located town in Northern Utah. The waters of the great lake wash its western exposure, while the mountains rise up grandly on the east. Highly cultivated farms crowd up to the mountains and to the lake-side alike, and the village is embowered in orchards and shade trees. From its commanding position, Willard affords one of the most charming views of our Dead Sea, and I believe is destined to soon be a resort for pleasure-seekers from both the east and west. In the mountains above is seen a great fissure rising from base to summit, the walls having a reddish tinge, and assuming forms as varied and beautiful as some of those in our leading cañons. On the north side of this immense gash are some noted iron mines, the "Iron Chief" and "Saratoga" being visible a thousand feet above the track by the piles of bright brown ore lying near them. The country continues rich and thickly populated almost until

Brigham City, 22 miles, is reached. Brigham was named in honor of the late Mormon leader. It is a thriving city of 2,500 people, and is only second in importance as a manufacturing center to Salt Lake City. It is essentially self-supporting, as about every article needed for wear or use is produced by the community. Here are extensive woolen-mills, tannery, two furniture factories, saw-mills, planing-mills, etc., all working up raw material from the forests or products of rural industry. Butter and cheese are also largely produced here for exportation. Box Elder Cañon is a gash in the Wasatch range near the town worthy of a visit. Box Elder county, of which Brigham is the county seat, has large areas of grazing lands, and the mountains in the western part, which lie near the Nevada line, are noted for their deposits of silver. Contiguous to Brigham on the north, is a broad stretch of level hay-lands, from which thousands of tons of hay are cut for local and outside markets. Four or five miles to the west can be seen the town of Corinne, which in days past has figured largely in the Montana freighting business, but which now declines, owing to the inevitable march of the iron horse northward.

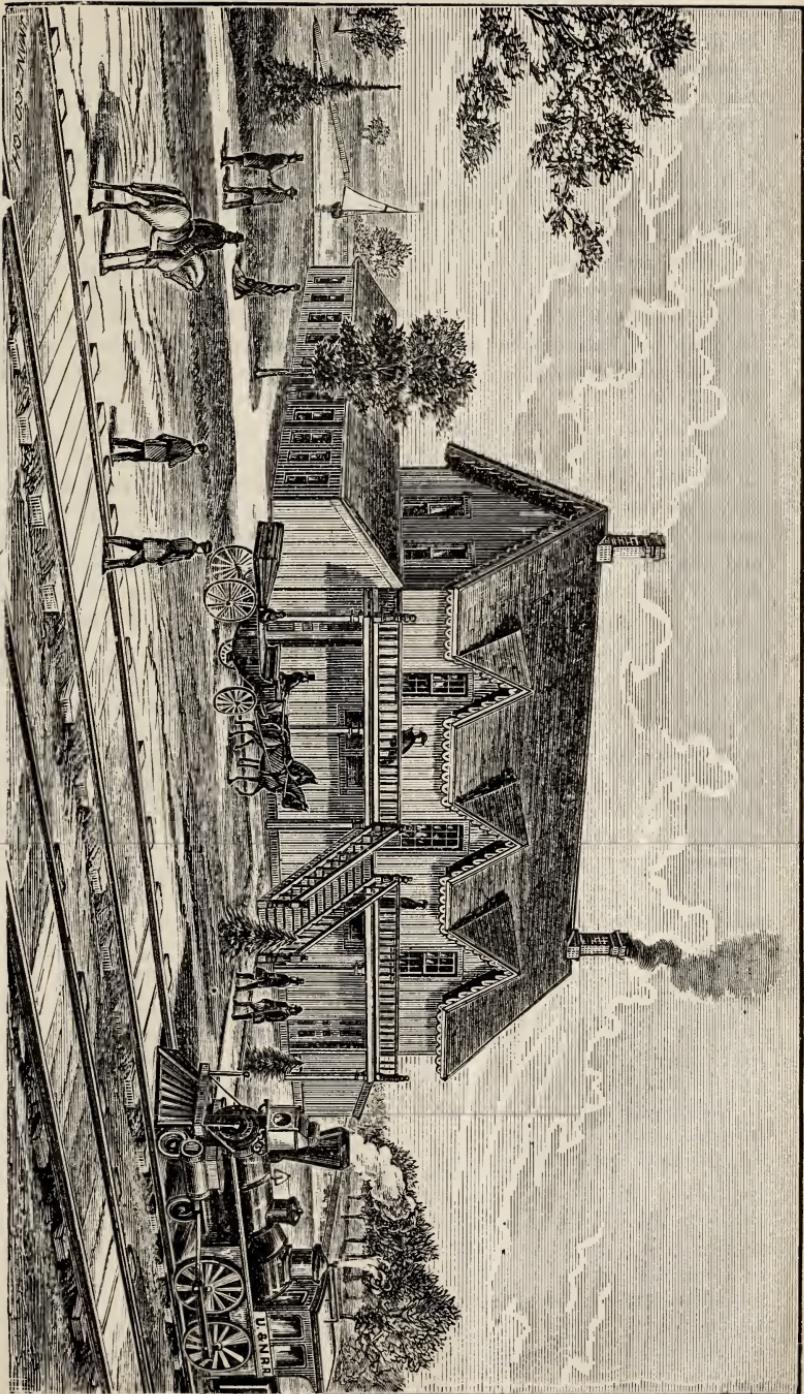
Water-Fowl.—Some of the best duck hunting in the territory can be had right here in sight of Brigham. Marshes extend far out from the lake proper toward the mountains, and are covered with ducks, geese and brant. Salt Lake City hunters consider this one of their choice by-ways and are often seen among the reeds filling their bags with water-fowl and snipe. Hunters will find fair hotel accommodations at the station.

Leaving Brigham, the road enters the pasture-lands already referred to, and soon creeps up along the bench-lands to the summit of the divide between Salt Lake Valley and Cache Valley. As this altitude—5,000 feet above sea-level—is being reached, the traveler gets fine views of Bear River, which is here pour-

ing its waters southward, toward Salt Lake. It is the same river which was so greatly admired at Evanston, Wyoming. There it was flowing northward, a course which it kept for a hundred miles or more, until it rounded the northern end of Bear Lake, and finally turned toward the great reservoir of Utah. Small bands of Shoshone Indians, whom the Mormons call "Lamanites," are living in a semi-civilized manner along the river, and their rude huts and tepees can be seen as the visitor gets his first view of the stream north of Brigham. They cultivate the rich valley soil in summer, and hunt among the neighboring mountains or along the lakes and rivers in winter. During 1878 one settlement of these raised 2,000 bushels of wheat and 1,000 bushels of potatoes, besides improving their homes to some extent.

Hampton Rock.—Near the summit of the divide, 43 miles north of Ogden, is Hampton Station, and a few hundred yards west of the road is the above landmark, which is peculiarly formed, and has something of a history. It is a bold crag of conglomerate, overlooking the valley. The rock is simply a mass of very small shells, is easily cut with an ax, and is quite generally used for building purposes. It hardens with exposure to the atmosphere. In cutting into the rock, a few years ago, the quarrymen found part of the petrified bones of what they believed was once a buffalo. Their theory for the appearance of *buffalo bones* in a mass of *petrified sea-shells* is, that when the briny waters of Great Salt Lake covered all this interior basin, an inquisitive buffalo came down from the grassy bluffs surrounding, saw this little island out a few hundred yards from the shore, and made his way to it. The island proved to be only a bed of shells and quicksand, the "king of the plains" sank to an inglorious death, was pickled, petrified, and finally "resurrected."

Cache Valley.—Shortly after leaving Hampton, this great valley, the "Utah Wheat Granary," came in full view in front and to the right. The valley will average more than a dozen miles in width, and is some fifty miles long, extending north over the Utah line into Idaho. In few places have I ever seen valley line and mountain base so well defined. At many places, not even the graceful foot-hills intervene, and on the east side an almost unbroken range for fifty miles rises abruptly 3,000 feet above the valley. No wonder those towering walls, with their many sharply outlined citadels running up into the clouds, are the pride of Cache Valley pioneers. They send coursing through the valley dozens of beautifying, earth-nourishing streams; they repel the furious winds of outer plains; they furnish an almost perfect barrier against the escape of the valley's wealth—the thousands of cattle and sheep produced; and they afford an abundance of splendid fuel and building material, while their treasures in silver and gold will ere long fill the country with consumers, and thereby create that great desideratum, a home market. The surface of the valley is quite level. In glancing along the course of the irrigating ditch—which can often be located on a "bee line" from the mountains on account of this regularity—you will here more than ever unconsciously assert that the sparkling streamlet is running uphill. Villages are strung all along the Utah & Northern Railway in this valley, from its point of entrance at Mendon to its exit beyond Franklin. The population is estimated at 14,000. The inhabitants are principally well-to-do Mormon farmers and stock-raisers, although manufacturing is quite extensively engaged in at several points. Having an average elevation of only 4,500 feet above sea level, and possessing very fertile soil, the valley lands produce all cereals and



HOT SPRINGS AND BATH ROOMS.
ON UTAH AND NORTHERN RAILWAY, NEAR OGDEN, UTAH.

hardy vegetables in great abundance. Nearly 1,000,000 bushels of grain and vegetables have been produced here in one season, and the area is not half utilized. There are nine flouring-mills, one pearl-barley mill, several woolen-mills, saw-mills, a foundry, planing-mill, etc., in the valley, all run by water-power from the swift streams. The Bear, Logan, Cub, Blacksmith's Fork and Little Bear rivers are the principal streams. They are fed by many others, and nearly all are full of trout and other fish. Prairie chickens are plentiful among the farms, within sight of the track, from one end of the valley to the other. Ducks and other water-fowl abound, and the thickly wooded banks of all the streams afford good cover for the sportsman. All of these mountain ranges are full of deer, elk and other large game. Logan would be the best point of rendezvous for hunters. Entering the valley at Mendon station, 53 miles north of Ogden, the road sweeps across the meadows and streams to the east side, and passes through

Logan, 60 miles from Ogden. Logan is the county seat of Cache county, beautifully situated near the mouth of Logan Cañon, and boasts a population of 4,000. Most of the manufacturing enterprises above noted are located here, and they give the town quite a lively air, as well as good solid foundation for prosperity. The lumber interest is probably most important, four large mills sawing and working logs from the mountains into lumber of all kinds, furniture, etc. Fine farms surround Logan, and dairying is a leading industry in the vicinity. A large Mormon temple is now being erected here. It is built of stone, 171 by 95 feet, and the highest tower is to rise about 200 feet above the street. Logan Cañon is one of the wildest and deepest gorges in the Wasatch mountains—a range in which gorges are pretty well developed—and is over 50 miles in length. Trout fishing in the river is first class. A good road leads into the most interesting portions of the Cañon. Logan itself commands a magnificent view, embracing 600 square miles of valley and mountain landscapes. Hotel fare good, at \$2 per day. Seven miles south of Logan is Hyrum, general headquarters for lumber dealers and manufacturers. Over 1,000,000 feet of lumber, and some 200,000 railroad ties, were cut from the neighboring mountains in 1878. Ties are floated out to Bear river, thence down to the Pacific Railway, and the lumber is shipped southward over the Utah & Northern. A few miles farther south is *Paradise*; and I am loth to chronicle the fact that Paradise is twelve miles *away* from the railroad. The village contains 500 people, who, in spite of their celestial abiding place, are busily engaged in producing a first-class article of Utah sorghum molasses, and a very fine grade of American beef cattle. From Logan there is semi-weekly mail to Hyrum and Paradise, and tri-weekly mail to Newton, 12 miles; Clarkson, 18; Weston, 24, and Oxford, 49 miles.

Smithfield.—The next station of note on the Utah & Northern is Smithfield, 67 miles north of Ogden. It is a farming community of about 1,000 inhabitants. More wheat is raised here than is produced by any other community in the valley. Farms are blocked out for miles on either side of the village. In the early days of settlement here all built their houses together as a means of protection against the savages, and to this day the farms are without buildings of any kind. All grain is hauled to the village and threshed, and all other property is kept there closely under the eyes of the owner. One of the largest flouring mills in Utah is located on the banks of the pretty and swift-flowing Summit creek, which dashes down past Smithfield. A large tannery is also in operation here.

Richmond—74 miles—attracted attention, especially, by its immense barns, which remind the visitor of those of the far Eastern States, and also suggest thrift and good living. Fruit and grain-raising are the specialties here. All of these settlements are nestled closely at the base of the mountains on the right, where the mountain streams and forests are more readily utilized; but three or four miles to the left of Richmond, and occupying a high plateau between Bear and Club rivers, is Lewiston settlement, where several hundred farmers have been producing good crops, without irrigation, for several years. This would indicate that other rich uplands in Cache Valley, which cannot be irrigated without considerable difficulty, may also be rendered productive.

Following Richmond, and distant 80 miles from Ogden, is Franklin, the last station in Cache Valley, and one which, under the old management of the road, was for several years known as the northern terminus. The glory of the erstwhile transfer and outfitting point has in one short year flown nearly 150 miles northward, following closely in the wake of the Utah & Northern construction trains, and the two or three hundred villagers of ante-railroad days are left in quiet possession of their orchards and grassy commons. But we should not forget that a mile south of Franklin we crossed the Idaho line, and that for the next 200 miles the course of the Utah & Northern is across the eastern portion of this young commonwealth.

IDAHO TERRITORY.

Idaho in the Indian tongue, we are told, means "Gem of the Mountains," and the Territory has thus far seemed to hold the title undisputed on account of its great diversity of resources, its mild and healthful climate and its fine scenery. It is about 400 miles long north and south and 300 miles wide across its widest portion, boasting an area of 86,000 square miles. The population is estimated at 20,000. Its surface is quite broken, short, disconnected mountain ranges, grouped in every conceivable form and running in all directions of the compass, being striking peculiarities of its landscape. Of course Idaho is not without its fertile valleys, large and small—or its occasional stretches of sage brush plain either; but these sage brush plains are easily cleared and make the best wheat lands in the world when irrigated. The mountains are usually covered with forests of pine, fir and other timber, and contain stored away in their deep recesses untold treasures of gold, silver, copper and other metals. Large quantities of ore in different districts are so rich that they are conveyed over the mountains many miles on pack animals to wagon roads, thence down to the Union Pacific 250 to 350 miles distant and eastward to Omaha or the far-away seaboard for reduction. The mines of Idaho have thus far yielded some \$65,000,000. We should remember, too, that quartz mining has hardly begun and that tens of thousands of square miles of Idaho's rugged mountain country yet remain to be prospected.

The capacity of soil and climate for a wide range of productions may best be judged from the fact that not only do all the cereals and vegetables which can be raised north of the cotton growing line in the Atlantic States flourish in the greatest perfection here, but that Idaho apples, pears, plums, peaches, grapes, nectarines, apricots, and many of the smaller fruits, are pronounced very superior in size and flavor by all visitors. At Lewiston, peaches are found blossoming in

the middle of February. Fruit trees and vines grow very rapidly. The long, dry summers, abundance of sunlight, a warm, sandy soil with perfect under-drainage and the plentiful water supply afford all the conditions necessary for the rapid growth and ornamentation of orchards and vineyards. Mercury rarely falls to 10 degrees below zero in any of the valleys, and that only during the coldest nights of winter. Idaho enjoys the same bright winter and summer skies, the equable temperature and cool summer nights already described as common to the Rocky Mountains, with, in addition, a tinge of the semi-tropical blasts from the Pacific. Cattle, sheep and horses require but little prepared feed, and rarely shelter, on the great stock ranges. Wheat yields an average of 35 bushels to the acre, and we are told of large fields in western Idaho which averaged 65 bushels per acre; oats average 55 bushels, an exception being noted recently in which a north Idaho farmer raised 1,164 bushels on ten acres or $116\frac{1}{4}$ bushels per acre. Farms are to be had in almost any of the desirable valleys under the homestead and pre-emption laws. The principal valleys are those of Snake, Salmon, Weiser, Boise, Clearwater, Raft, Owyhee, Payette, Clarke's Fork of the Columbia and Malad rivers, ranging from 100 to 1,000 miles in length and enlarging from cañon width often to an arable area five, ten and even twenty miles wide. Produce sells at the principal towns at about the following prices: wheat, 90 cents per bushel; oats, 50 cents; potatoes, $1\frac{1}{2}$ cents per pound; butter 40 cents; eggs, 35 cents per dozen; chickens, \$6 per dozen; bacon, 25 cents per pound; hay, \$15 per ton; wool, 20 cents per pound; wood \$7 per cord. The expenses of living can also be inferred from the cost of the following items: coffee, 33 cents per pound; sugar, 20 to 25 cents; tea, 75 to \$1; prints, 10 cents per yard; flannels, 35 to 60 cents. There is a fair demand for mechanics of nearly all kinds at from \$4 to \$6 per day. The surplus grain is shipped by steamer down Snake River from Lewiston, in western Idaho, to the Pacific Ocean, and thence to Europe, at remunerative prices. Idaho is a good country to emigrate to for those who desire to procure homes on public domain. Dairying, stock raising, farming, are all open avenues to competency for those of small capital and a willingness to work, and there are few such fields for either the capitalist or prospector as are presented in the vast and enormously rich gold and silver belts of "The Gem of the Mountains."

Tourists will find much to interest them. Placid valleys basking in the sunshine, with gigantic snow-clad mountains towering in the background; bold, dashing rivers, with waterfalls 200 feet high—among these the great Shoshone, of Snake River, aptly called the "Western Niagara"; lakes amid the mountain tops, with myriads of fish disporting in their translucent depths, or waterfowl covering their placid surfaces; and surrounding forests inhabited by the elk, deer, mountain sheep, goat and bear—are all here, with no embarrassing amount of civilization, if the health-seeker or Nimrod should fear that. In the romantic Payette Lakes, near Boise City, are found a rare species of fish, called "red fish." Their flesh is beautifully red; they weigh as high as eight and ten pounds each, and are not only very "gamy," but delicious eating. Only three other lakes in the world are known to contain this variety of fish. Of the fur-bearing animals may be mentioned the wolf, red fox, silver-gray fox, beaver, mink, martin and muskrat as being numerous. Among the many natural curiosities of the territory are the hot springs found near Boise City and along the Utah & Northern Railroad, already noted for the medicinal properties of

their waters; the great salt springs, not far from Eagle Rock, elsewhere described; the grand Salmon River Cañon, a gash in the Salmon range over 50 miles long, of surpassing wildness, sublimity and beauty; and the wonderful lava fissures and dykes along Snake River — fissures sometimes of unfathomable depth, and through which Snake River pours its mighty volume to the western sea, and dykes often stretching away for dozens of miles, composed of the black, once super-heated, lava, harder than any granite, and sometimes resembling the well known formation of the Giant's Causeway, on Erin's shores.

Boise City, the capital, and, thus far, commercial center of Idaho, is pleasantly located on Boise River, 225 miles west of the Utah & Northern Railroad at Eagle Rock. Its altitude is 2,880 feet above sea level, and it contains some 2,000 inhabitants. It is solidly built, contains four churches, three schools, United States assay office, two good tri-weekly papers — the *Statesman* and *Idahoan* — Masonic temple, and penitentiary; and the business of the pretty little city can be judged from the fact that Boise merchants receive from 3,000,000 to 4,000,000 pounds of freight annually. Other prominent points are Silver City, Idaho City, Lewiston and Salmon City, all boasting schools, churches and other marks of progressive communities. They can all be reached from points on the Utah & Northern Railroad, noted in pages following. In this general résumé of Idaho, we have already exceeded our rightful limits, and must turn to our journey.

Across Eastern Idaho. — Adjoining Cache Valley on the northwest, and several hundred feet nearer cloudland, is Round Valley. It is 30 miles long by some 15 broad. The railroad here crosses a region thousands of acres in extent, which affords superb pasturage, but which is only sparsely settled as yet. Emerging from this broad upland, we obtain a lovely view of Bear River and Valley, both soon crossed on the newly-laid rails. Near the crossing the road enters Battle Creek Cañon, and Battle Creek Cañon gets its name from that terrible thrashing General Connor here administered to a large encampment of hostile Bannacks some ten years ago. The fight was hotly contested; but, after losing half their number, the savages fled ingloriously, and they have had a wholesome remembrance of the occasion all these years. Closely following is Marsh Valley, a region abounding in lakes and marshes, and sometimes flanked by very picturesque masses of reddish sandstone.

Swan Lake, at the station of the same name, 106 miles north of Ogden, is conspicuous, with other smaller sheets, for the thousands of snow-white swans, geese, ducks and other waterfowl mirrored in its waters. Swan Lake is a mile long and about a quarter of a mile wide, resting amid high hills, and its shores fringed with luxuriant reeds and grasses.

The Great Soda Springs — At Oneida, 125 miles north of Ogden, we find a tri-weekly conveyance plying to this long-famous resort, which is 35 miles east of the railroad. Soda Springs are located within a stone's throw of Bear River, and near the great "bend" already alluded to. One spring is graced with a lively stream vent, which finds its way upward through an orifice in a massive boulder. Fremont named it "Steamboat Spring," on account of its measured puff which resembles that of an engine. A group of four of the other springs have attracted particular attention on account of the curative properties of the waters. The strongly mineralized fluid is ever bubbling up from the depths of pretty basins, and is as pleasant as a beverage as it has been found exhilarating

and strengthening as a tonic. Invalids with some of the most deep-set and loathsome blood diseases claim to have found a perfect cure in these fountains. A mile distant are other and little less interesting springs, the waters of which are so pregnant with calcareous matter as to quickly form a coating of limestone upon any object immersed in them.

The vicinity abounds in other attractions, which must soon win thousands to summer sojourns. Near the springs last referred to is a pretty little lake upon which, subject even to the passing breezes, is a floating island of earth and luxuriant vegetation, which has been set adrift from the shore. Four miles southeast of Soda Springs is another "Swan Lake," one of the loveliest natural gems set in the Wasatch chain. It reclines in an oval basin, whose rim is ten feet above the surrounding country. The shores are densely covered with trees, shrubs and the luxuriant undergrowth native to that country. The outlet is a series of small moss-covered basins, symmetrically arranged, the clear water overflowing the banks, trickling into the nearest emerald tub, then successively into others, until it forms a sparkling stream, and dances away to a confluence with Bear River in the valley below. It is a matter of common belief among old residents of the locality that the lake is bottomless, no soundings having yet developed its depth. Adjacent to this fit abode for water-nymphs is the singular sulphur lake, out of whose center liquid sulphur incessantly boils, and coats the shores with thick deposits, looking as though it might be a direct out-cropping of Plutonian regions. Salmon and trout fishing is superb in the clear water of the lakes and streams. Deer, geese, ducks, grouse, sage hens and prairie chickens are also found in great numbers in the vicinity, all together holding out rare charms for the traveler, health-seeker, or disciple of the gun and rod.

This was once the favorite resort of Brigham Young, and is still the regular summering place of numerous Salt Lake City merchants, who have built appropriate residences. A hotel of moderate accommodations and the abiding places of a few regular residents tend to make of Soda Springs quite a hamlet.

The Blackfoot and Fort Hall.—Journeying northward on the Utah & Northern, we pass through picturesque Portneuf Cañon, several times crossing the clear, swift river of the same name, passing Black Rock station at 152 miles, and tarrying briefly at Blackfoot, 180 miles from Ogden. Old Fort Hall, a few miles west of the road, is one of the oldest historical points in Idaho, having been established by the Hudson Bay Fur Company more than half a century ago. An old hunter still living in the vicinity wintered here as early as 1833, and tells of meeting the celebrated Kit Carson and Colonel Subletz in one of the block-houses during that winter. Buffalo, so numerous on this side of the mountains at that day, have entirely disappeared; and the old trapper thinks the coming of the iron horse a sad innovation. The old fort, with a tract of land forty miles square, is now used as an Indian agency and reservation, while the military has taken up its abode at New Fort Hall, seven miles east of Blackfoot Station.

Blackfoot river, near the station, is a strong mountain stream two feet deep and 50 wide. Here we enter a splendid stretch of farming country—a stretch extending to the big bend of Snake River, 50 miles to the northwest, and being from 8 to 15 miles wide. Many ranch sites have been staked off during the past six months, and we are told of an important irrigation enterprise which has already been inaugurated. A ditch to be some 40 miles long, and with

ample capacity to water 50,000 acres of land, is being led along the foot of the bluffs overlooking this great tract, which, up to a year ago, had never been touched by the ploughshare. We have also virtually entered the

SNAKE RIVER GOLD FIELDS,

as the river named is only a mile or two distant, and placer claims have been staked off on all sides. Ever since the earliest Idaho and Montana "stampedes," gold has been known to exist in different bars along Snake River, in Eastern Idaho. The metal, however, was generally found in the form of "flour gold," and, during all these years, has been passed by as almost worthless, because it could not be saved by the ordinary process of sluicing. Only a year ago several ingenious Salt Lake miners began experimenting with green copper plates electroplated with silver, by which the precious metal, however fine, may be saved at slight expense. These plates are about one-fourth of an inch in thickness, of any convenient area, and are put up like an inverted V. They are first given a coat of mercury, which readily adheres to the surface, when the gold-bearing sand is sluiced on from a flume, and what gold it contains adheres to the mercury, which, when thoroughly impregnated with gold particles, is scraped off and retorted, leaving the gold pure and ready for shipment. A careful investigator asserts that the plate process is bound to revolutionize placer mining where gold is discovered in particles too small to pan or sluice; and even Chinese diggings will become desirable and paying properties wherever the plates can be brought into requisition.

Messrs. James Lane & Co., who are now operating with these plates near the mouth of Raft River, and only about 75 miles from the Utah & Northern Railroad, are panning out from \$20 to \$40 per day to the man. Four men operate two sets of plates, and a ten days' run in December netted the proprietors \$70 per day. The miner receives \$1.50 per day and board. The results of this new process, therefore, are certain to create general excitement, and it is safe to predict that during 1879 the Snake River sand-bars, from one end of the stream to the other, will be located and worked.

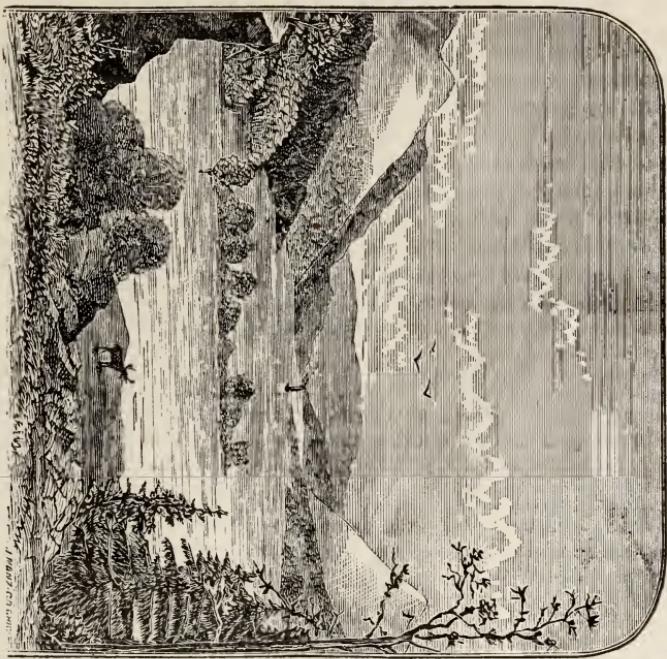
The chief advantage of these Snake River diggings, says the *Salt Lake Tribune*, is that they are not confined to any one gulch or bar. "The river is 1,100 miles long, and the fine gold has been found along the banks in every bar for a distance of 400 miles. A careful examination of the country, and frequent tests of the ground, indicate that the metal abounds where previously it has been unlooked for; that the vast extent of the diggings makes up in part for the extreme fineness of the deposits, and that there are places along the stream where the gold is sufficiently coarse to render sluicing exceedingly profitable to careful and experienced miners. Perhaps the most singular feature of the country is the very general distribution of the gold, for though some locations near the Snake are undoubtedly superior to others, there is scarcely a foot of ground within ten miles of the river, as far up or down as any prospecting has been done, that will not prospect colors more or less numerous.

"The presence of gold in vast quantity, therefore, is beyond all question, and it now remains to ascertain the best and the cheapest process of securing it. The copper plates with their covering of mercury, to which the gold adheres, will most likely be found to do the work, and their extensive employment in

this region by those able to purchase them is already certain. Their operation has been critically examined by several prominent mining men of Salt Lake, who have worked them with their own hands the better to satisfy themselves of their value; and in all cases, unbounded confidence has been expressed in their utility. Better than anybody's opinion, however, and more reliable than any expert's report, is the stubborn fact that at every weekly clean-up, from 75 to 100 ounces of gold are collected and expressed direct to San Francisco."

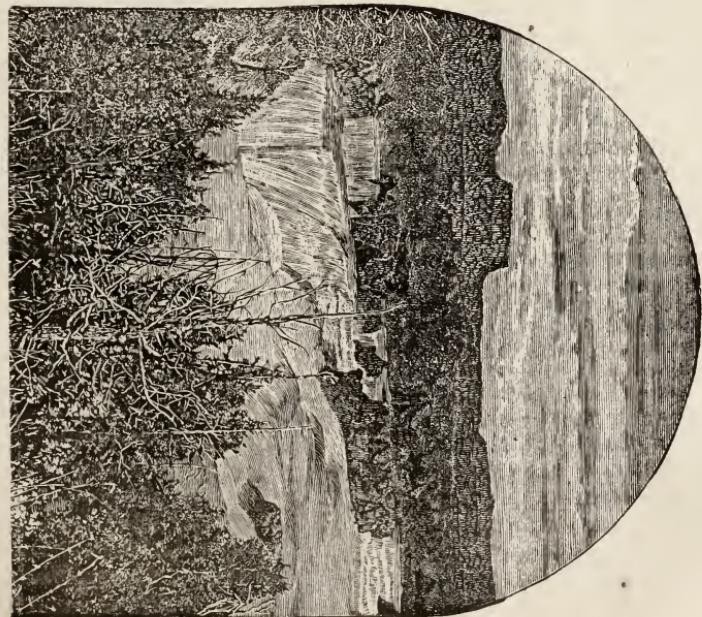
A correspondent located at Salmon Falls, Alturas county, Idaho, some 200 miles down Snake river from the Utah & Northern crossing, writing under date of December 26, 1878, has the following to say concerning the outlook in his section: "This is a very promising portion of the Snake river gold fields. I think the best for several reasons. Mining experts say, who have been over the ground from here down the river, 40 miles to Glenn's Ferry, and from here up the river to Blackfoot, the present terminus of the Utah & Northern railroad, that we have the best facilities for working these immense gravel deposits. Among the reasons for this is the fact that the water ditches which a number of the companies have, run directly over the claims, and those not having water will be at an expense of from \$100 to \$250, which is the highest estimated cost of any ditch that is proposed to be dug.

"Our gravel is deeper and prospects better; we have more fall and can work here the year round, the river never freezing at this point. There are immense springs that come out of the lava beds, or the surrounding plains, forming little rivers of themselves and emptying into the Snake, for a distance of 50 miles along the river. These springs are colder in summer than in the winter. It is impossible for a man to take a shovelful of gravel out of the banks without getting fine gold in smaller or greater quantities, and when we take into consideration that one man handles tons of the gravel in a day with a hydraulic,—which is a portion of the process used to work it,—you can form an idea whether 'there's millions in it,' or not. I feel myself a second 'Bonanza King.' Gold floats before my vision as it did in the wonderful cave before Aladdin's eyes. The river along here is lined with locations that prospect well, and with locations that turn out many colors, and are held for speculation, I suppose. It takes capital to work one of the claims; that is, to get the necessary machinery required to save the gold. We have a district formed here called the 'Salmon Falls Mining District,' running from the mouth of the Malad to Payne's Ferry, taking both sides of the river for four or five miles back. There are two other districts formed on the river, one above reaching to the famous Shoshone Falls, and taking in that most wonderful cañon with perpendicular walls 400 feet high, and where men in 1869-70 made as high as \$100 a day to the man, with a rocker, a copper plate, and a bottle of cyanide of potassium. The other district is the Eureka, below us, in both of which there are new locations made every day. By the way, there were men who made \$9 per day to the man, at Payne's Ferry, the upper end of our district, and Wickham and Donovan, with a small beach machine and a few sluice boxes, have been averaging \$15 to the man ever since they started up last February. This is going to be a great mining country. The river banks are rich in fine gold, and these new silver electro-plated copper plates are going to save it. They have proven beyond doubt what they will do, up at Bonanza Bar. Our climate is mild, having very little snow, and when it does fall it never lasts more than 12 hours. We have rain in the fore part of



LAKE PEND D'OREILLE, Idaho.

REACHED VIA THE UNION PACIFIC AND UTAH & NORTHERN RAILROADS.



SHOSHONE FALLS, SNAKE RIVER.

the winter. Our spring commences about the middle of February. This climate is favorable for mining. From the number of letters I receive asking for information, I think there will be quite an immigration here next spring and summer."

This vast new region, already awakened by the rumble of the Utah & Northern locomotives, is as easily accessible as any railroad point in the west. Its discovery just at this time augurs brightly for the Montana branch of the Union Pacific. Eagle Rock, at which point the Utah & Northern Railroad crosses Snake River, is within a few moments' walk of some of the bars referred to above—indeed, the soil for miles thereabouts will, it is said, show good "prospects" of this fine gold. Miners' outfits are obtainable at Blackfoot or Eagle Rock, at reasonable prices.

Eagle Rock.—Northward from Blackfoot, 30 miles, or from Ogden, 206 miles, is old Eagle Rock Bridge across Snake River, and the present (April, 1879) temporary terminus of the Utah & Northern Railroad. It is one of the most interesting spots between the Union Pacific Railroad and the Montana line, although a misnomer, as Eagle Rock, a black lava crag in mid-river, is 10 miles further up the Snake. The majestic and navigable flood, the noblest of Idaho rivers, here dashes its entire volume through an ominous rock-walled fissure less than 50 feet wide. The staunch old wagon bridge resting at either end on the singular lava palisades, is 60 feet above low water mark. Soundings of the deep blue stream made from the bridge failed to discover bottom *at 240 feet*. It is near here that a striking resemblance of the formation to that of the Giant's Causeway in the old world, is noticeable. A few yards below the old bridge the splendid new iron structure of the Utah & Northern spans the stream. Snake River abounds in salmon trout of great size and voracious appetites. They are a welcome feature of bills of fare at eating stations along the road. The stream is over 1000 miles long, and waters a vast area of fine farming and grazing lands.

Near here we obtain excellent views of those noted landmarks, the Three Tetons, 100 miles away to the northeast; the Salmon River range, about the same distance on the west, and Black Butte, 50 miles to the northward. Never have I seen such jagged, sharp-pinnacled, and apparently insurmountable landmarks as the glacier-crowned Tetons,—indeed, one of them leans in its awful abruptness, far out beyond the perpendicular, seeming almost ready to topple into the profound depths of chasms at its base.

Willow Creek Valley, flanking the valley of the Snake on the east, and only a few miles from Eagle Rock, promises to be one of the garden spots of Idaho. It is some 20 miles long and half a dozen wide; possesses a fertile soil, and is convenient to good pine timber. Quite a compact little settlement is already seen in the lower end of the valley.

The Oneida Saltworks.—Among the most important developments in the vast region now being opened up by the Utah & Northern, are those at the salt springs, on what is known as the Old Lander Emigrant Road, leading from South Pass to Oregon, and about 85 miles east of Eagle Rock Bridge. The road named passes directly along the flat below the spring, where, before being concentrated in pipes, the water had spread out, and evaporating in the sun, formed large masses of salt crystals which attracted the attention of passers-by, and led to the discovery of the spring flowing from the hillside above. It is clear and sparkling as the purest spring water, and never would be suspected of containing

mineral. The valley in which it is situated is known now as Salt Spring Valley, and is about 10 miles long by an average of one mile wide; through it flows a rapid stream filled with mountain trout. The salt springs were first taken up by B. F. White, Esq., (the present owner,) and partner, in June, 1866, and works have since been in constant operation, every year witnessing an increase in the demand, until almost the entire stream flowing from the spring has been utilized. The salt is made by boiling the water in large galvanized iron pans, into which it is led by wooden pipes leading direct from the spring, thus insuring perfect cleanliness, and a uniformly white, clean and beautiful product. The water is kept constantly running into the boilers and is kept at a boiling heat all the time. The salt is shoveled out once in every 30 minutes, and after draining for 24 hours is thence thrown into the drying house, there to remain until sacked and prepared for shipping. The most scrupulous cleanliness is observed in every operation, and when the immense banks of salt lie piled up in the drying house they resemble huge snow-banks more than anything one could imagine. It takes from 2 to 4 months for salt made in this manner to dry and ripen, and for this reason it becomes necessary to keep on hand a large supply, so that at any time a thousand tons of the purest and whitest salt in the world may be seen here in these far west "Oneida Saltworks."

Following is an analysis of the Oneida salt, made by Dr. Piggot, the well-known analytical chemist, of Baltimore. It shows a higher percentage of pure salt than the celebrated Onondaga brand, manufactured at Syracuse, while neither "Liverpool," "Turk's Island" or "Saginaw" salt approach it in purity, or are as white, clear or soluble in liquids:

Chloride of Sodium (pure salt).....	97.79
Sulph. Soda.....	1.54
Chloride of Calcium.....	.67
Sulph. Magnesia	Trace
	100.00

In 1866 only 15,000 pounds of salt were here manufactured; but the demand in Idaho, Utah and Montana has so steadily increased that the product has since averaged about 600,000 per annum, and ran up to 1,500,000 pounds in 1878, much of this last year's production having been consumed in Montana smelting works. It is sacked in 5, 10, 25, 50 and 100 pound bags, and is laid down at points 300 miles distant, by wagon transportation, at from 3 to 4 cents per pound.

The country surrounding the springs is covered with a thick carpeting of rich and nutritious grasses, sufficient to pasture a nation of cattle. Salt River Valley, only a few miles from the works, is 50 miles long by an average of five miles wide. Residents claim that it is the best watered valley in Idaho, and that it would alone support a population of over 50,000 souls, if settled up and properly cultivated. The Caribou gold mines are 15 miles to the west toward Snake River. So far, only placer mining has been engaged in; but, during the past season, several well known mining experts from Salt Lake have visited that section, and it is confidently asserted that another year there will be quartz developments in this camp second to none in the country. The Caribou mines are only 60 miles from the Utah & Northern Railroad at Eagle Rock, and will in due time add much to the business of the road, as well as furnish a good market for farmers who may locate in neighboring valleys.

THE SALMON RIVER MINES.

The view from Eagle Rock to the northwest, as already indicated, takes in an almost boundless and an exquisitely beautiful vista of rugged, snow-capped mountains. The central group of these is the great Salmon River range, 125 miles away, a region which is just now deservedly attracting much attention in western mining circles, but which is only recognized in the busy eastern world as a real *terra incognita*. The Salmon River, Yankee Fork and Loon Creek gulch mines have long been quietly sending southward fine lots of nuggets and dust. But it has remained for the railway era to open up the wonderfully rich quartz mines which have been first systematically worked the past season. The principal quartz districts lie along Salmon River and its tributaries, covering an area of some 10,000 square miles. The entire region is abundantly watered with clear, swift mountain streams, and timbered with pine, spruce, cedar and other varieties of soft wood. The Salmon River range occupies almost the entire area, and renders it one of the roughest and most difficult of access in the whole Rocky Mountain country. The two or three arable valleys of any considerable extent, having an altitude of only from 3,800 to 5,000 feet above the sea, and being extremely fertile, are already being rapidly turned into productive farms and garden spots. Road-making has been necessarily slow, and the different camps, far from railways, often harassed by savages, and having, until the past season, only been connected by trails, have done much to attract even the slightest notice from the outside world. Nearly all merchandise has been distributed from Salmon City to the various camps, from 25 to 100 miles distant, on pack-mules, while ores have been brought back the same way. However, the marvelous richness of the ores in different mines, the rapid extension of the Utah & Northern Railroad, and the great interest recently manifested by outside capitalists in the various districts, are bringing about the natural results. From now henceforward the construction of roads, bridges, mills and other needed improvements is assured, and the wealth of the Salmon River mines will be as familiar a theme as that of any of the bonanza districts of Colorado, Montana or Nevada.

The mines are in numerous instances well defined ledges of both gold and silver. In the Yankee Fork district, 90 miles southwest of Salmon City, are the noted "Chas. Dickens" and "Ramshorn" mines, carrying ores which yield from \$300 to \$1,000 in silver to the ton, and a considerable percentage of gold. A shipment of 100 tons of ore to Salt Lake City the past summer yielded an average of \$550 per ton. The "Ramshorn" produced \$40,000 last year. The "Chas. Dickens," discovered in 1877, has a record hard to beat. The owners were "dead broke," and, thinking to make a winter's grub stake, immediately went to pounding up surface quartz in a hand-mortar. In four weeks' time, with this one mortar, they took out \$11,000. To wind up their work for the fall, they took seven tons of ore by pack train to Salt Lake, and sold it for \$3,500 per ton, and the parties to whom they sold made a handsome profit. The following spring, '78, they packed in lumber and built an arastræ. The summer was consumed in getting it in working order, and it was late in the fall when they got it to grinding the ore. They worked six weeks before the winter's storms compelled them to close down, and they cleaned up \$28,000. The tailings, which were saved, assayed \$204 per ton, mostly in silver. A

tunnel is now in 520 feet on this mine, disclosing a continuous four-foot vein of ore, which is said to average \$300 worth of gold and silver to the ton. The "Montana" mine near by shows an eight-foot vein of ore, from which shipments netting \$2,000 to the ton have been made; and 15 tons of select ore now lying in the ore house *contain \$150,000 in gold and silver*. It is reliably stated that not a ton of ore has been taken from the "Montana" that would not yield \$1,000.

The native gold ores found in this locality are marvelously rich. A run of 2,800 pounds from the "Toronto" mine, in September last, in an arastræ, yielded \$1 in gold for every pound of ore. The "Shoo Fly" mine, on Moose Creek, is one of the largest deposits, showing a vein 14 feet wide. A test run of 1,000 tons of ore taken from this vein without sorting yielded \$30,000 in gold. Ores from the "Norton" mine are so rich that miners have made as high as \$100 per day in crushing selected specimens in an ordinary druggist's mortar. The "Norton" has a well defined crevice of seven feet.

Thirty-five miles west of the Yankee Fork District is Stanley Basin District, rich in gold and silver quartz mines and containing some very good placer diggings. Small quantities of ore have also been shipped from here and proved of very high grade. Dahlonega Creek District, 45 miles north of Salmon City, also abounds in narrow but extremely rich veins of free gold ores. The quartz is thus far pronounced utterly free from all refractory metals, and averages in a dozen different mines from \$25 to \$40 per ton. A ten-stamp mill and half a dozen arastræs are in successful operation here. About 100 men are busily at work in the Dahlonega Creek wilds. The camp is about 75 miles from Bannack City, Montana.

The above are only a few of the more prominent districts and mines, whose marvelous richness seems wholly without precedent in the mining world. Locations of quartz mines already run up in the thousands, and not one-fourth of the country has been prospected. A dozen arastræs and two stamp mills have been in operation the past summer and fall with a total product of some \$200,000. About 700,000 pounds of ore, worth not less than \$150,000, was shipped via the Utah & Northern Railroad to Salt Lake and other points during the same period. Copper, lead and coal also abound in different districts.

Salmon City, the county seat of Lemhi county, and the present and prospective commercial center of the region, is located on the main Salmon River, near the junction of the Lemhi Fork, 175 miles northwest of the Utah & Northern terminus. It contains some 500 inhabitants. There are two hotels, several general merchandise stores—one of which shipped in 750,000 pounds of goods during the past season—brewery, jewelry store, etc., at Salmon, and a good flouring-mill a short distance up the valley. The altitude is said to be less than that of Salt Lake, and experiments demonstrate that vegetables and cereals of all sorts flourish in the rich valley surrounding. Lemhi Valley, five miles wide, extends 30 miles above town. Messrs. Woodard & Moore, who farm extensively two miles below Salmon City, produce about \$9,000 worth of grain and vegetables per year. Trails lead to rich mining camps in every direction; distances from Salmon City, as follows: Leesville gold mines, 15 miles; Dahlonega Creek, 45; Challis, 65; Loon Creek, 100; Bonanza City, 110; Bannack, 75; Stanley Basin, 100; Salmon Silver District, 20.

Challis, which the past season has served as an entrepôt to the Yankee Fork

District, is pleasantly located in Round Valley, 135 miles from Blackfoot station, on the Utah & Northern, and three miles from Salmon River. It contains 300 inhabitants, with good stores and one or two hotels, and as it is at present the head of navigation for prairie schooners and is the center of pack train transportation for several good camps, is becoming something of a rival of Salmon City. Bonanza City, 35 miles west of Challis, also contains some 300 people, all directly or indirectly supported by the rich Yankee Fork mines. The population of the entire Salmon River region is estimated at from 1,500 to 2,000.

The road now most extensively traveled by Salmon River freighters and miners turns directly westward from a station called Sand Hole, on the regular Montana stage route. Tri-weekly coaches of the Salisbury line run direct to Salmon City in from 50 to 60 hours. Fare from the temporary terminus of the Utah & Northern Railroad to Salmon City, \$45. The road entering the Salmon River region at Challis turns off directly to the northwest from Blackfoot Station, crossing Snake River at Central Ferry and reaching Challis in 135 miles. Wood, water and grass are plentiful enough for campers on either route. Miners' or farmers' outfits can be purchased at reasonable rates at the terminus or, with the cost of freight added, at either Challis or Salmon City. Transient board at the latter points from \$2 to \$2.50 per day, or by the week from \$10 to \$14.

For Montana.—Gilmer, Salisbury & Co's line of daily Concord coaches, carrying the mails and Union Pacific Express, connects with Utah & Northern trains at the terminus for all cities, towns and mining camps in Montana and Eastern Idaho. The telegraph also continues northward into the Montana settlements. Graders and track-layers are busily engaged in pushing the Utah & Northern onward in the wake of these pioneering institutions to the Montana line, now only 100 miles away. Thus by early autumn the Territory will be reached, and that beautiful wonderland, Yellowstone Park, will be within less than 15 hours' staging distance from the Pullman and parlor coaches of this splendid narrow gauge. Distances by stage from Eagle Rock are about as follows: Lovell's, Montana, 163 miles; Bannack, 190; Salisbury, 200; Virginia City, 228; Glendale, 230; Butte, 253; Deer Lodge, 280; Helena, 290; Bozeman, 300; Missoula, 325. The stages consume from 36 to 72 hours in reaching these different points. On April 1, 1879, the following rates were in effect: From Omaha to the prominent Montana points, 1st class, \$100; 2d class, \$75; emigrant, \$45. Holders of 2d class and emigrant tickets, via Gilmer, Salisbury & Co's line, will both be carried from the railway terminus to destination in covered mail wagons. One hundred pounds of baggage carried free by rail; forty pounds free by stage, on first-class; fifty pounds free by wagon on 2d class and emigrant; extra baggage on stage and wagon lines, fifteen cents per pound. Stages and wagons run daily.

EASTERN OREGON AND WASHINGTON.

As the management of the Utah & Northern Railroad contemplate an early extension of the line westward, from Eagle Rock or some point in the vicinity, to Oregon and Washington, and as the road already opens up a new and short route to those great commonwealths, a brief outline of their attractions for the home-seeker may not come amiss ^{here}. They contain together in round num-

bers an area of 200,000 square miles, or are four times greater in extent than New York, and twice as great as the six New England states and Ohio and Indiana combined—a vast empire, within whose bounds almost every variety of climate can be found, and whose mountains, plains and valleys send forth a greater diversity of products than any section of the globe. Together, they boast a coast line of 700 miles, and have 1,000 miles of navigable rivers. Oregon now contains 160,000 inhabitants, and Washington about 25,000. About a third of their extent is mountainous and heavily timbered, the remainder being composed largely of grazing and agricultural lands. Gold, silver, iron, copper, coal and other minerals abound. The yield of the Oregon gold and silver mines has thus far been about \$36,000,000, and its average annual yield now promises to be largely augmented by recent developments in silver mines near the eastern boundary. Oregon contains 2,000,000 sheep—the increase from 300,000 in 1870—and, during the past season, marketed 6,000,000 pounds of wool. The State also has 500,000 head of cattle. It is estimated that Oregon and Washington possess grazing lands which can easily be made to sustain 40,000,000 sheep and 10,000,000 cattle. Oregon, with not one fifth of its agricultural domain utilized, produces 10,000,000 bushels of wheat annually, much of which is shipped direct to the old world. Other cereals are also extensively produced. The production of lumber is 100,000,000 feet, and of coal 60,000 tons annually, and the salmon exports foot up 450,000 cases per annum, worth \$2,500,000. Seventy-five river steamers ply regularly on the Columbia in Oregon and Washington. It may also be interesting, as an index of civilization and morality in this extreme northwest, for readers to know that Oregon has 700 free schools, valued at \$500,000; 200 churches, valued at \$700,000; 50 newspapers, and public buildings and improvements—made at federal, state or county expense—valued at \$3,000,000.

Oregon and Washington are each naturally divided into two distinct regions by the Cascade mountains, which traverse the commonwealths from north to south. The western or Pacific coast region receives an abundance of moisture from natural showers, while the climate of the eastern section more nearly resembles that of Idaho and Utah, rains still being a trifle more frequent and heavy in eastern Oregon and Washington than in any Rocky Mountain region east of the Sierras. At Dalles, eastern Oregon, on the 45th parallel, the mean temperature in spring is 53°, in summer 60°, autumn 52°, winter 35°; mean temperature for the year 53°, or about 10 degrees warmer than the yearly average in Maine, New Hampshire, Vermont, and northern New York. In this section, too, snow rarely attains a depth of six inches in the valleys. This eastern section is 100,000 square miles in extent, and its 50,000 inhabitants are anxiously looking for nearer neighbors. The most extensive and productive valleys in this section are the Grande Ronde, Powder, John Day, Malheur, and Crooked. They produce nearly all the fruits common to our Middle States, including peaches and nectarines.

They are still about 400 miles northwest of the Utah & Northern terminus, but rejoice in the possession of the navigable Columbia, upon which steamers run daily all the year. In March, 1878, work was progressing on a wagon road from Blackfoot station to Boise, and it is believed that this new route from the Utah & Northern Railroad to Oregon and Washington, via Boise, by which the distance to that section from any eastern point can be shortened several hun-

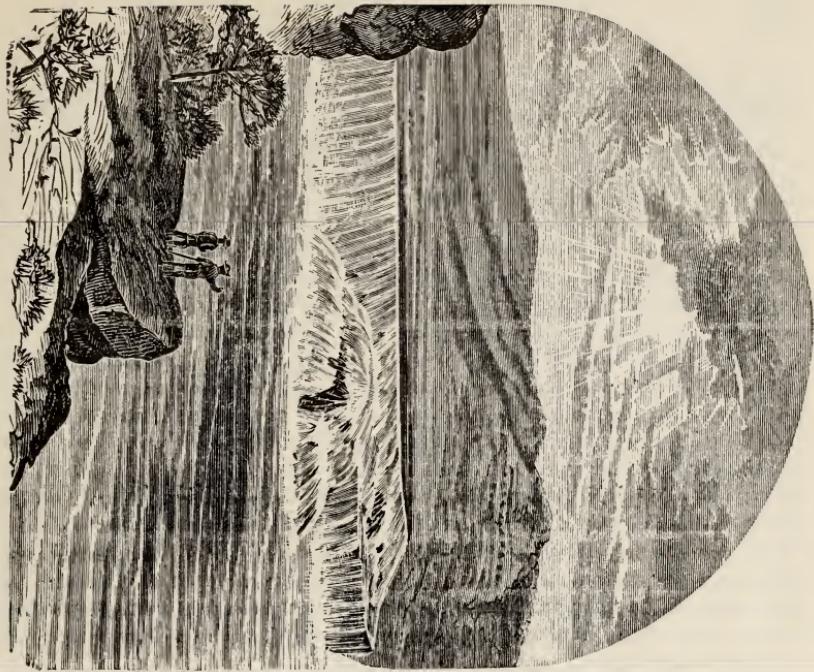
dred miles, will be a well-traveled thoroughfare by early summer. The road north of Boise has been open and traversed by daily stages for years, and fares from Omaha via Kelton and Boise, or via San Francisco, the Pacific Ocean and Columbia River to the leading points in Oregon, average nearly as follows: 1st class, \$125; 2d class, \$113; emigrant, \$80. The latest and lowest rates, together with other valuable information relative to a journey to the northwest, can always be obtained upon application, in person or by letter, to Thos. L. Kimball, Omaha, Nebraska.

CHAPTER VII.

MONTANA TERRITORY.

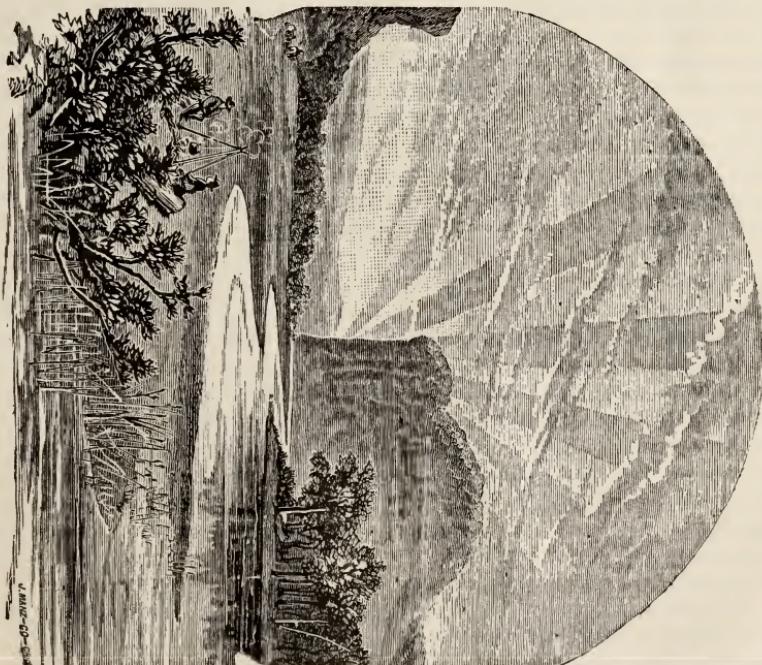
In the midst of our western mountains, a fitting crown of our continent, and sending to distant oceans two of America's grandest rivers, is the broad Territory of Montana. Next to the youngest, and hitherto one of the most isolated of our dependencies, Montana supplies a record and promises a future at which one may well pause in considering. Glance at the map, and try to realize what we mean when we say that Montana covers all that vast region lying between the forty-fifth and forty-ninth parallels of north latitude, and the one hundred and fourth and one hundred and sixteenth meridian of west longitude, extending five hundred and fifty miles from east to west, and nearly three hundred north and south—a total area of about 150,000 square miles, or nearly 100,000,000 acres. But perhaps we can all more fully appreciate the meaning of these figures when we remember that the six New England States and the great State of New York would not cover this area, that Minnesota and Iowa could be turned over upon it and a margin left for Connecticut to rest upon, or that England and Wales, Ireland and Scotland combined, do not near equal it in size.

And how ridiculous would seem a comparison of the resources of any of our older or larger states with those of Montana. This magnificent empire of the new Northwest contains 16,000,000 acres of fertile farm lands, a more extensive area than is covered by an entire average Eastern State. It contains 38,000,000 acres of unexcelled grazing lands, a pasture-field alone larger than the great prairie State of Illinois. Its surface underlaid with stratum after stratum of coal—largely embraced in the grazing and agricultural area already mentioned—amounts to 60,000 square miles, and would not only entirely cover the giant State of Pennsylvania, but would extend well over the boundaries of the commonwealths which encompass that greatest of all our eastern coal-mining regions. And then Montana forests, 14,000,000 acres in extent, cover more territory than those of the noted lumbering State of Michigan, whose product in this line reaches a valuation of \$40,000,000 per annum. Of the mineral wealth of Montana the world knows more, for a region whose quartz veins and sluice-boxes have poured out over \$150,000,000 in treasure in the first seventeen years of its settlement, under such discouragements as have fettered this Territory, cannot pass unnoticed. Remember, too, that this seemingly boundless domain,



GREAT FALLS OF THE MISSOURI, MONTANA.

REACHED VIA THE UNION PACIFIC AND UTAH & NORTHERN RAILROADS.



BEAVER HEAD ROCK, SOUTHERN MONTANA.

with resources impossible to comprehend or calculate, does not occupy an unfavorable position on this globe of ours. The whole of England, Ireland, Scotland, Belgium, Holland, and some of the most beautiful and fertile portions of sunny France, lie north of the extreme northern boundary of Montana.

Montana's name indicates its prevailing chirographic character, and is simply a translation of the Indian name *Tay-a-be-shock-up*, or "Country of the Mountains." For convenience in description it is popularly divided into five large basins, four lying east of the Rocky Mountains and one to the westward. These basins are broken into large numbers of minor valleys separated and sheltered by spurs projecting from the main mountain ranges. Each may be said to have its own peculiar river system, as complete and grand as that of any first-class state. Though generally divided from each other by mountain ranges, they are easily accessible by good wagon roads over low passes. The entire region, a most harmonious blending of mountain and valley, lake and river, presents a physical grandeur and excellence scarcely equaled on the globe. Verily, as a resident expresses it, "Montana was molded in the heroic style of terrestrial architecture. Her cloud-piercing mountains, in which lie buried the wealth of nations; her unrivaled scenery, which can charm the painter's eye; her magnificent rivers, upon which can be borne the commerce of a world; her extensive plains, upon which may feed and fatten countless herds; her fertile valleys, that would yield wealth and happiness to thousands of homes; her mild and salubrious climate—all go to prove this."

Rivers and Valleys.—Montana undoubtedly presents the finest river system in America, and, therefore, in the world. Here, almost within stone's throw, are the founts of the two great rivers of our continent that finally flow into either ocean, the one, with its tributaries, possessing 2,000 miles of navigable waters within Montana's boundaries. Northward for 300 miles, and then eastward, through peaceful valleys, the fairest of all Montana landscapes, through occasional mountain gorges, not surpassed in grandeur in the world, now thundering over dizzy precipices and again almost losing its identity in unruffled lakes, pours the mighty Missouri. Eastward from the nation's wonderland and pleasure-ground, and across the southern portion of the Territory, claiming features none the less majestic, and even more picturesque than the first named, is the beautiful Yellowstone. Northward and southward from points not many miles distant, and wandering in diverse ways for a thousand miles, only to meet again near the western sea, flow the Hellgate and the Snake, the two great forks of the Columbia. Aside from the Missouri, Yellowstone and Upper Columbia—each possessing thrice the volume of the Ohio at Pittsburgh—are a dozen so large and beautiful that we pause and wonder whence they come, and that the world knows so little of their manifold attractions. Among these I may name the Jefferson, Gallatin, Madison, Musselshell, Bitter Root, Sun, Milk, Hellgate, Beaverhead and Flathead. Adding to these the almost numberless laterals which course and beautify every ravine and valley, we find here unlimited water-power and inexhaustible supplies of water for irrigation. These bounteous waters, clear as crystal, and flowing over gravelly beds, are everywhere full of either mountain or salmon trout and other fish.

The valleys drained and nourished by these mountain streams are wider, more extensive, and possess a lower average altitude—therefore a more genial climate—than any in the Rocky Mountain chain north of New Mexico, except-

ing alone the valley of Great Salt Lake. They are unsurpassed for fertility, and are generally sheltered and rendered extremely picturesque by overlooking pine-covered mountain ranges. They are rarely more than a dozen miles wide, but it is estimated that if the arable lands of the principal ones alone were placed in a continuous body they would form a belt 4,000 miles long, averaging four miles in width—a belt of country unexcelled for fertility, which would stretch across our prairies, plains and mountains from Boston to San Francisco. Flanking these valleys, and often extending to the summits of adjacent mountains, are the almost illimitable natural pasture lands, producing thick carpets of grasses, which cure as they grow and in winter furnish food as nutritious as oats. The soils are largely the washes and wear of the great mountain ranges. For ages the valleys and plains have been gathering their present accumulation of valuable decomposed and pulverized organic matter, which is so largely drawn upon by vegetable growth. Those qualities which eastern farmers try to replace by plaster of paris, bone-dust, ashes, lime, etc., exist in lasting quantities in these alkaline earths. This fact and the dry, pure atmosphere account for the great superiority in all elements of nutrition of far-western grasses, grains and vegetable products over those of the states.

Montana offers neither the illimitable and monotonous level prairies, which distinguish some Mississippi Valley states, the vast, impenetrable forests, which were encountered and struggled with for years away "down east," and in which a settler could hardly carve a home in one lifetime, or the marshy lowlands of the Lake region, whose enervating atmosphere needs no mention here; but a charming alternation of wooded mountain and arable valley, of rolling upland pasturage and well-drained meadow, characterize the topography of the Territory.

Mountains and Forests.—One fifth of the area of the Territory, or about 20,000,000 acres, is mountainous. While a few of the ranges are broken and grandly rugged, the majority consist of beautiful swells of no extreme height and presenting acclivities so gentle that natural roads run over them by easy grades at many points. Indeed, valley, bench and mountain often blend so evenly that it is difficult to tell just where the one ends and the other begins. The mountains are jeweled at all altitudes with copious springs, "as clear and cold as crystal ice." Even the passes over the highest ranges in Montana usually have an altitude of only about 6,000 feet above sea level—no greater than the elevation of the plains at Cheyenne, Wyoming, and less than 1,000 feet greater than Denver, Colorado, a city surrounded by highly productive farms. Nearly all the arable Montana valleys average from 500 to 2,000 feet lower than the most fertile ones of Colorado or Utah. Montana's highest peak would hardly reach timber-line in Colorado, and her average mountains only reach heights which in the Centennial State are made to bloom and blossom as the rose. It is a land of gentle acclivities, over which you often pass without knowing when you are upon the summit. These gradual slopes and moderate altitudes greatly facilitate travel, development and commerce. Nearly all of the richest mines are easily approached by natural and ungraded roadways—an advantage found in few other mining regions in the world. Further, a consultation of the valuable tables compiled by Prof. Gannett, of the Hayden survey, discloses the fact that 51,600 square miles of Montana's area is less than 4,000 feet above the sea, while only 9,000 square miles of Colorado's area, and none of

Utah's, is at a less altitude than 4,000 feet. Montana also possesses valley and bench lands covering an area of 40,700 square miles at a less altitude than 3,000 feet, while neither Colorado, New Mexico, Utah or Wyoming contain an acre of surface as low as 3,000 feet. Carrying this still further, we find that these official reports make the mean or average height of Montana above the sea 3,900 feet; that of Nevada, 5,600; of New Mexico, 5,660; of Wyoming, 6,400, and of Colorado, 7,000 feet—Montana possessing an average altitude above the sea of 2,260 feet less than the general average of those rich and thriving commonwealths. These comparisons are worthy of study in connection with the climatic features of Montana, for it is patent that if its mountain ranges possess an altitude no greater than that of arable valleys in other Rocky Mountain regions, its climate in valley and mountain must be less rigorous than that of localities even further south. The main range of the Rockies, the Bitter Root and Cœur D'Alene, in the western portion of the Territory, and the Belt, Highwood, Snow, Judith, Tobacco Root and Bridger ranges, in the southern and central portions—nearly all extending in a general north and south direction—are Montana's principal "water-sheds."

About 13,000,000 acres of this mountain-land are covered with heavy forests, while probably the fringes of soft-wood timber skirting all of the streams—which here are never thought of as forests—would aggregate 1,000,000 acres additional of timber land. In the western portion of the Territory thousands of square miles of the roughest mountain country are covered with a heavy even growth of pine, spruce, cedar and tamarac, while in the central and eastern sections, where the mountains are less rugged, these same varieties lend great beauty to the landscape by occurring in lesser breadths—often reminding us of groves set on grassy slopes by human hands. By a wise disposition in this matter, the heavier forests almost invariably occur on the finest mineral lands, where most needed. The lower country, exceptionally good for grazing and farming, though not always adjacent to timber, is close enough for practical needs.

Lumbermen recognize in these forests three distinct varieties of pine, these being familiarly known as "yellow," "black," and "bull." In the lower valleys, often many miles distant from other forests, are the fringes of cottonwood, water ash, willow and box elder, all growing large enough to answer for the unpretentious homes of the farmers and stock men, or for fuel. In the north-western corner of the Territory we encountered a species of mountain mahogany which grows to a diameter from six to ten inches, and seems as fine-grained and heavy as the beautiful Honduras mahogany. To the best of my remembrance the tamarac of New York and other Eastern States grows only in the lowlands and swamps, while here it is found high up in the loftiest mountains. The yellow pine, which is most commonly used here, takes a handsome finish, possesses much strength, and is so hard and pitchy that ordinary wear and weather have little effect upon it. It is the general utility lumber par excellence, and Montanians carve it into almost anything, from a stool to their most elaborate residences. Black pine and bull pine are more knotty, and are used for rough work of all kinds. Spruce is extensively used for scantlings and joists, and here approaches the oak for toughness and elasticity.

While Montana can offer no such prodigious wonders of the forest as California or other Pacific Coast sections, she boasts the most extensive forests of

moderately large trees I have ever seen. In Missoula county you can ride for days at a time through yellow pine timber, in which trees stand within four or five feet of each other, many towering up seventy-five feet to the first limb, and being from three to five feet in diameter. The banner lumber district is along Hell Gate River, in the county named. Pine and cedar trees, six feet in diameter at the base and three hundred feet high, are not at all rare in that locality, and the spruce grows proportionately large.

There are now forty-two sawmills in Montana, turning out some 6,000,000 feet of lumber annually. The market for lumber, heretofore confined almost wholly to the mining camps and cities, with the mining interest sadly depressed for a series of years, these figures are hardly an indication of what lumbering in this rich northland will be in the near future. Immense quartz mining enterprises are beginning to consume heavy lumber with great rapidity, while the cities which are being fostered by their lavish yields of gold and silver are also consuming different grades as never before.

Three or four of the most prominent towns of Montana have extensive planing mills, sash and blind factories, etc. Helena has three or four such establishments, which turn out every species of plain and ornamental wood-work needed in building the most elegant residences. One firm, besides their extensive factories at Helena, have four sawmills within eighteen miles of the city. Their sawmills cut nearly 30,000 feet of lumber daily. A portion of their product is rapidly turned into dressed lumber, sash, doors, blinds, office furniture, concentrating machines, fanning mills, etc. There is also a factory which turns out some very pretty designs of furniture from native pine and cedar. A church of Virginia City is furnished with home-made cedar furniture, which is as handsome as worshipers could wish.

Average retail prices for lumber in the different Montana cities are about as follows: Rough lumber, \$20 to \$25 per 1,000 feet; dressed and matched flooring, \$40 to \$45; dressed finishing lumber, \$40; lath, \$7 per 1,000 feet; shingles, \$4.50; good four-panel doors, from \$3.50 to \$5 each, according to size and finish; common sash, glazed and primed, \$3 to \$4.50 each; blinds, \$3 to \$4.50. Wholesale prices are from eight to ten per cent less. In some localities, notably in Missoula county, the chopping and hauling of logs is done by contract. There the choppers receive \$1 per 1,000 feet for felling the trees and cutting them into suitable lengths, realizing about \$3 per day for their work. Then haulers deliver the logs at the mills at an average of \$3 per 1,000 feet. Sawyers are paid \$50 per month and board. Near Helena all work in the timber or at the mills is paid for by the day or month. Choppers get \$50 per month and board; firemen and yardmen, \$60 and board; sawyers, \$125 and board; rough hands, never less than \$50 and board. At the planing mills, journeymen get \$4 per day, and the foreman \$5 per day.

THE MONTANA CLIMATE.

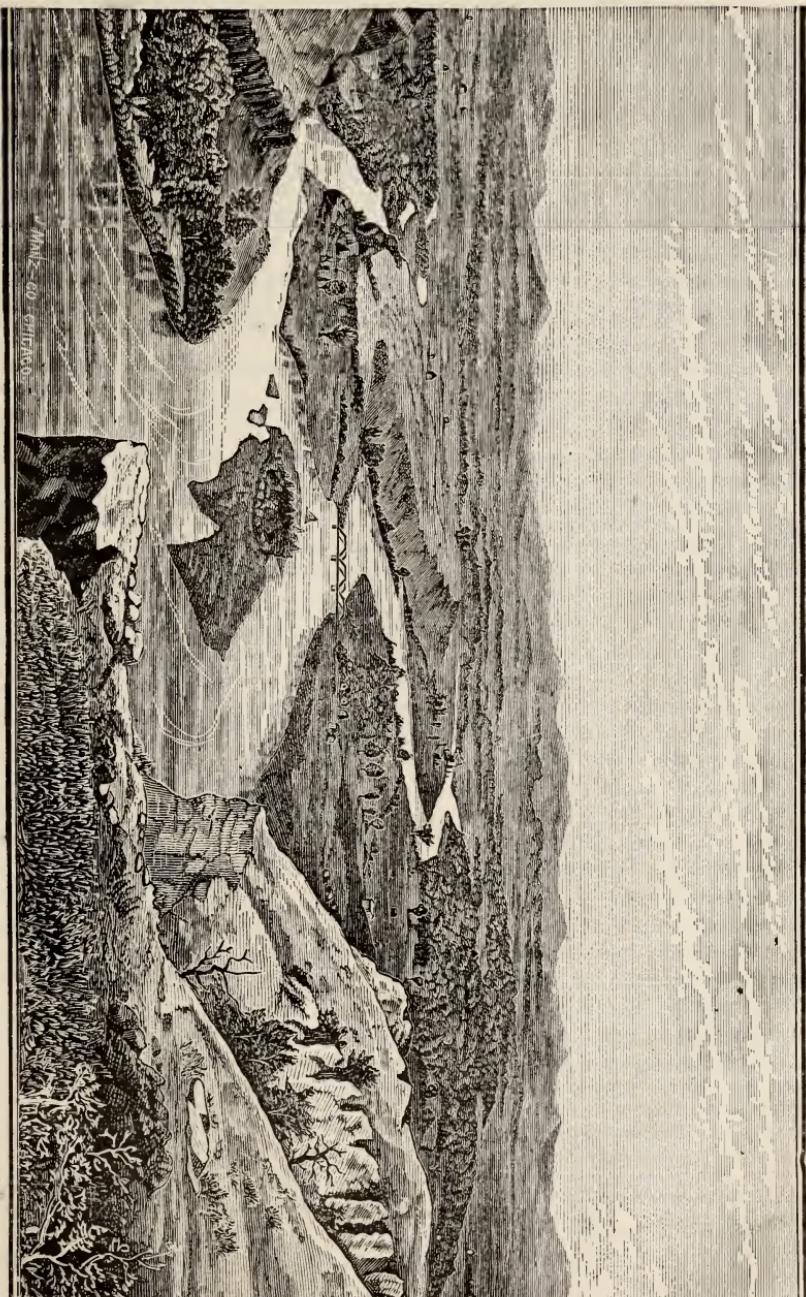
It is a very popular, though entirely mistaken notion, that the farther north we go the colder it grows. The altitude, the character of the surface, prevailing winds, nature of the soil, and many other conditions, give us entirely different climates on the same lines of latitude. I would like to devote many pages to the consideration of this one subject, for to homeseekers everywhere the climate of any of these northwest territories is the one great, inconceivable bugbear.

But I must be content with calling attention to the facts as they exist, without attempting to more than allude to the "whys and wherefores" of their existence. Observations and tests, followed through a long series of years, prove that the western coasts of the continent in the northern hemisphere are far warmer than the eastern. This is directly traceable to the influence of the atmospheric currents and the thermal currents of the great oceans in distributing the heat of the tropics to these shores. That great river of warmth, the equatorial or Japan current, kindly pours the full force of its heated breath against the low coastline of Washington and Oregon, and inland over plains and mountain tops, even east of Montana's eastern border. Tracing the isothermal line of 50° Fahr. half way round the universe, we find it passes through the great wheat growing districts of southern Russia, through the beautiful vinelands of southern France, and on westward through Harrisburg, Cleveland and Chicago in our own country; but, presto! our hot air currents from the western ocean are too warm for it in Montana, and it describes a far northern circle, taking in vast tracts of all-the-year pasturage in the British possessions.

Deer Lodge, Montana, possibly, will not be thought so far "out of the world" when readers stop to think that it is on the same parallel of latitude as beautiful Venice; or Montana's northern boundary be deemed so hopelessly near arctic seas, when they consider that it has the same latitude as Paris, where all the fruits and cereals of the middle temperate zones of the earth reach their greatest perfection. In writing of the Montana climate I of course refer to that offered by the inhabitable and settled valleys. In the mountains winter does often pinch very hard and snow falls to great depths—but of course such regions are only utilized for their mines and forests—and even then are no worse than the forests of Maine and Michigan. It is the glorious and almost continuous sunshine, however, which shall always be recognized as the greatest charm of the Montana climate. Records before us prove that in recent years there have been 254 days of perfect sunshine at Helena, while Boston averages only 191, and Buffalo and Chicago about 170 *fair* days. Following is an extract from the meteorological register at Fort Benton, Montana, bearing upon this point particularly, and also giving the mean temperature of spring, summer, autumn and winter for six consecutive years. This shows an average of 291 *fair days each year*—100 more than Boston boasts. Fort Benton, it should be remembered is in the extreme northern part of the Territory:

METEOROLOGICAL REPORT, FORT BENTON.

	1872	1873	1874	1875	1876	1877
No. of fair days.....	305	291	277	289	286	300
No. of cloudy days.....	60	74	88	76	79	65
Mean temperature—						
Spring.....	11°	25°	13°	17°	14°	24°
Summer.....	48°	52°	56°	55°	54°	50°
Autumn.....	61°	63°	68°	66°	61°	58°
Winter.....	29°	28°	33°	36°	30°	32°
Average monthly fall of rain or melted snow .	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.
	1.5	1.66	1.98	1.82	1.72	1.06



THE "THREE FORKS"—MADISON, GALLATIN AND JEFFERSON RIVERS.
REACHED VIA THE UNION PACIFIC AND UTAH AND NORTHERN RAILROADS.

As valuable as any reports which could possibly be offered are the notes kindly furnished us by Granville Stuart, Esq., one of the very earliest of the Montana pioneers. Mr. Stuart's personal observations extend from 1857 to 1871, and therefore supply a faithful record during a period not covered, I believe, by any other authority. The notes were principally made in Deer Lodge valley, which is much higher in altitude and considerably colder than the majority of the settlements. Could Mr. Stuart's notes have been made in either of the Missoula, Yellowstone or Missouri valleys, the showing would have been far more favorable for Montana.

The winter of 1857-8 was very mild. Snow did not lie longer than a few days in any of the principal valleys. Cold not intense, except a few days in December and January. Cattle and horses in open air, without shelter or food except such as they got on the prairie, gained steadily all winter, and came out fat in the spring.

The winters of 1858-9 and 1859-60 were very similar, averaging probably a little colder and with a little more snow, but quite pleasant in the main.

The winter of 1860-1 was a little colder, but would not have been called a bad one in Illinois or Iowa.

The winter of 1861-2 was one of unusual severity, snow falling in different valleys to a depth of from six inches to two feet.

The winter of 1862-3 was quite as mild as that of 1857-8. The thermometer at Deer Lodge fell no lower than 12° below zero.

The winter of 1863-4 was but little inferior to that preceding, snow lying but a few days at a time in the valleys. A severe snowstorm occurred January 7, after which mercury fell to -33°, but the cold snap only lasted a week.

The winter of 1864-5 showed an increased degree of cold. Mercury fell as low as -34° in December and January; but snow was not bad until March, when mercury also again fell as low as -27°. Stock did well enough without any feed during this winter.

The last half of the winter of 1865-6 was quite severe, mercury sinking to -34°, with violent snow and wind storms; but no stock died, although none were fed.

The winter of 1866-7 was very mild up to December 24, with no snow. From then on till April it was the worst winter known in Montana. However, scarcely any cattle died, although but few were fed and none sheltered. Coldest day, -32°.

The winter of 1867-8 was comparatively mild; coldest day, -30°. No suffering among stock. Grass was plenty, and was never covered with snow. No sleighing at Deer Lodge at any time. Valleys dry and dusty. The snowfall during this winter, not including that which melted as it fell, was 20½ inches; greatest depth at any one time, 2½ inches.

The winter of 1868-9 was almost no winter at all. No snow of consequence; not enough for sleighing at Deer Lodge. Stock all fat in spring, and were not fed or housed. Nearly all the hay cut for the last two years was kept over, it not being necessary to use it. Total snowfall, 16½ inches; greatest depth at any one time, 2 inches.

The winter of 1869-70 quite mild; not enough snow for sleighing at any one time, and that little lasting only a few days. Total snowfall, 29 inches.

The winter of 1870-71 was also very mild and open. Scarcely any snow, and stock kept in good condition on the range. Greatest depth of snow at any one time, 3 inches.

The winter of 1871-2 was a very severe one, but not commencing until the 23d of November. The greatest depth of snow at one time in Deer Lodge valley was 12 inches. There was but little suffering among stock, except among herds of Texas cattle which had been driven in during the fall, and were thin in flesh, and unaccustomed to the climate. Not more than two per cent of all stock in the Territory were lost.

Mr. Stuart discovers throughout his twenty years of experience in the northwest that the hard winters seem to come exactly five years apart, and ventures the suggestion that it would undoubtedly be a wise and humane move upon the part of stockmen to make a little provision for these exceptional seasons. Note the following table of mean temperature for the months of December, January, February and March, and snowfall for each month, the observations having been made at Deer Lodge, and covering a period of eight years:

	December.		January.		February.		March.		Average for 4 months	Total am't snowfall for 4 months.	Greatest depth.
	Temp.	Snow-fall.	Temp.	Snow-fall.	Temp.	Snow-fall.	Temp.	Snow-fall.			
1867-8.....	24°	in.	24°	1½	25°	1½	35°.5	2½	20°.7	14½	in.
1868-9.....	26°.7	8	20°.4	3½	24°.6	3½	29°	2½	25°.5	17½	2
1869-70.....	24°.1	7½	22°	4	29°.4	7½	26°.5	10 1-5	25°.5	29	4
1870-71.....	19°.2	4½	30°	5½	23°.5	8½	32°.5	12½	26°.3	31	3
1871-2.....	16°	16½	15°.7	11	30°	2½	34°.8	11	24°.1	41½	12
1872-3.....	17°.3	16½	21°.4	6½	16°.5	8½	29°.3	1½	21°.1	33	16
1873-4.....	12°.3	2½	25°	8 3-5	22°	4	26°.6	11 3-5	21°.5	26½	3½
1877-8.....	30°	none	29°	1½	34°.7	1½	45°.3	2½	33°.5	4½	1
Means for 8 years. }	21°.2	7½	20°.2	5½	26°	4½	32°.5	6½	25°	24½	

NOTE.—Observation not made during winters of 1874-5, 1875-6 and 1876-7.

Deer Lodge, as already noted, will average a few degrees colder than most of the other principal valleys of Montana, and yet, as shown in this table, its climate is really excellent, the average snowfall of the four months for eight years being only 24½ inches, and in only two years did it exceed four inches in depth at any one time. The table gives the average temperature of both day and night, and of course the temperature for daytime only would be very much higher. A series of observations prove that Missoula, Montana, enjoys an average temperature of over 5° higher than Deer Lodge, where the above observations were taken. This is also about the same mean for the large valleys of Sun River, Missouri, Gallatin, Jefferson, Madison, Ruby and Beaverhead. The greater portion of inhabited Montana has an annual mean temperature of 48°.

The report of the observer at the United States signal service station, Virginia City, Montana, furnishes some interesting facts concerning the climate, and very favorably exhibits its salubrity and general healthfulness. The altitude of Virginia is 5,713 feet and its climate correspondingly rigorous, when compared with the fertile valleys lying nearly 2,000 feet below. The yearly statement shows that since the establishment of the station in 1872 the mean temperature has varied but little in any year, the highest being 40.8 degrees, and the lowest 39.4 degrees. That Virginia is not subjected to excessive summer heats is established by the fact that the highest temperature recorded in the six years covered by the report was 94 degrees. The mildness of the winters in Montana is shown by the statement that, with but one exception, in January, 1875, when the temperature reached 44 degrees below zero, the lowest temperature recorded in six years was 19 degrees below zero. Another, and to agriculturists a most important item, is the statement showing the amount of the rainfall—the greatest being in 1877 (17.47 inches), and the least for a whole year—the report for 1872 being for only a portion of the year—in 1874 (16.32 inches), showing an equality in the annual distribution of rain and snow that is very remarkable.

VIRGINIA CITY REPORT.

	Mean Temp.	Max. Temp.	Min. Temp.	Total Rainfall.
1872	40.5°	—	—	12.00 in.
1874	40.8°	90°	-18°	16.32
1875	39.4°	88°	-44°	16.48
1876	40.7°	92°	-19°	17.00
1877	40.5°	94°	-16°	17.47
1878	42.5°	92°	-15°	19.06

NOTE.—Returns for 1872 are incomplete.

A few comparisons may not be amiss. To residents of states I shall name they will prove that Montana not only offers more sunshine and with its moderately rigorous winters a far more healthful, invigorating atmosphere than any section east of the Missouri can boast. The average temperature of Helena, Montana—which is 1,000 feet higher and consequently colder than many of the best valleys—in 1866 was 44.5°. The average of six stations in Minnesota for the same time, 41.6°. The amount of rain and melted snow at Helena were 22.36 inches; at six stations in Minnesota, 27.89°. The average of winter months in Helena, in 1867 was 23.70°. In Minnesota, 21.3°.

The mean of Maine and New Hampshire for a period of six years from 1866 to 1872 was 43.7°, and that of Vermont for same time, 43.2°, while that of all or our principal valleys as before stated is 48°, being more than four degrees warmer than those old and wealthy states. The mean annual temperature of Wisconsin for five years from 1866 to 1871 was 44.8°; that of Michigan for the same time was 45.8°; of Iowa, 46.4°; of Massachusetts and New York, 47.3°; of Connecticut, 47.6°; of Nebraska, 48.6°; of Illinois, 49.9°; of Ohio, 51.2°. This shows that the climate of Montana is warmer than that of the first six of those rich and powerful states, and that it is but little colder than Nebraska, Illinois and Ohio. Then it should be remembered that the dryness of atmosphere makes several more degrees in favor of Montana's climate as against the damp, raw temperatures of some of the states named. These figures, correct and reliable, prove that the climate of Montana presents no obstacles to her rapid advancement. The Missouri river is thoroughly open near Helena a month earlier each spring than at Omaha, 500 miles farther south, with almost unfailing regularity.

A brief rainy season, sometimes almost doing away with the necessity for irrigation, usually occurs in June. The amount of moisture falling annually in Montana is about three-fourths that which descends in Minnesota or one-half the amount which descends in the region bordering the great lakes. A feature peculiar to Montana and other northwestern territories is the "chinook." During my recent winter's stay at Helena I made the acquaintance of this somewhat remarkable visitor, and must say, in common with residents, that it was a case of "love at first sight." On two occasions, when the snow was lying unusually deep on mountain and in valley, a strong blast—but one so balmy that it was a luxury to breathe—greeted us in the morning, and by nightfall almost every atom of snow in the valley was on the way to distant oceans. These warm winds seem to come direct from the heated currents of the Pacific, and thus the "chinook," so regularly on hand when most wanted, turns winter into summer at a moment's notice. Malaria and epidemics are unknown, and destructive storms very rare in Montana. Summer nights are delightfully cool, and indeed every breath of the pure mountain air, winter or summer, perfumed with the odor of pine and spruce, is a conscious inhalation of new life and strength. There is, then, nothing in the Montana climate to deter any intelligent home-seeker north of the Mason and Dixon line from making himself even more comfortable the year round than has been his wont in the east. Surely, if other proof could be asked, it should suffice that over half a million cattle, horses and sheep roam winter and summer in their fatness on Montana's hills, unsheltered and unfed, save as they feed and shelter themselves on their more than ample pasturage.

AGRICULTURE.

Blessed with an excellent climate, presenting the finest valley system to be found in the entire Rocky Mountain plateau, and possessing a soil singularly fertile and lasting, Montana offers unexceptionable inducements to the agriculturist. After what has been said about the climate it will be understood that irrigation is necessary in most of the valleys—and here is another fancied bugbear. Many homes can yet be found where the owner can have his own clear mountain stream rippling by his door and irrigate his land by turning a few furrows with the plow. But even where it requires some capital or association of labor to lead large ditches or canals from the rivers to the desert lands, irrigation is a ridiculously small drain of labor or means when compared to the average losses annually sustained in "rainy states" through flood or drouth. By irrigation the Montana farmer insures his crop, and as it is estimated that the average expense of irrigating Montana farms is not over 50 cents per acre per annum, we would call it very cheap insurance. At the worst the cost of such improvements and of bringing the land into cultivation is much less than is generally required to improve and cultivate land in a timbered country, and ditches once made are always afterward ready for use; they also afford convenient water-power, in many places, for any purpose that a farm or dairy may require. I remember noticing on a Madison county, Montana, farm an inexpensive power of this kind almost at the door, which was utilized for churning butter, sawing wood, boring and mortising lumber, turning the grindstone, fanning-mill, etc.; and indeed these conveniences were noticed on many farms in the Territory. It is found, by experience, that irrigation not only keeps the land up to its original fertility, but constantly improves it in quality, though the same crop may be raised years in succession. Stewart, in his valuable work on irrigation, says: "Water, when used in irrigation, brings within reach of the plants a largely increased amount of nutriment. Water is the universal solvent. No water in its natural condition is pure. The water of springs and streams holds in solution or suspension a quantity of mineral and gaseous matter, that possesses high fertilizing value." Irrigation has been used on the same soil two hundred years in New Mexico, without other fertilizing properties than those brought by the water. The farmer is also free from any solicitude in regard to drouths or floods or storms; the progress of his crop is uniform from seeding time until harvest; if he is inclined to "much water" he can use it at his pleasure; if he thinks a light "sprinkling" will do, the facilities are at hand. By irrigation pastures are kept green in the late summer and fall, as well as in the spring; and trees obtain a longer and larger growth in one season, than by any unaided process of nature. It is thought that the superior quality of the fruit and vegetables grown in Rocky Mountain valleys is as much attributable to irrigation as to the climate.

Of the 93,000,000 acres of land in the Territory, 16,000,000 are suitable for cultivation. An ex-surveyor general of the Territory estimates that there is in the more prominent valleys alone, room for 36,000 first-class farms of 160 acres each, while another is of the opinion that there is a strictly agricultural domain here greater in extent than the entire area of Ohio. In few of the valleys is there more than one-fourth of the arable land claimed, while in many one-tenth would be a nearer estimate. About 275,000 acres are accounted for on the tax

lists. The extreme productiveness of the black loamy soil is beyond all question—an average crop of almost any of the cereals or vegetables on old or new lands, unfertilized, being about 75 per cent larger than on the best bottom lands in any state east of the Missouri. Irrigation, as already noted, has generally been considered a necessity, although I know of localities in Montana in which from 25 to 40 bushels of wheat to the acre were produced without it the past season. Thousands of acres of the richest and warmest soils—those found high up on bluff and mountain sides—were in 1877 sown with fall wheat, and the harvest last year of this grain, produced without irrigation, was so bountiful that many farmers who have hitherto raised spring wheat exclusively in the valleys, are now resorting to the hitherto despised high lands. Snows fall deeper on these altitudes than in the valleys, and keep the grain well covered during much of the winter. It should be stated here that agricultural lands in Montana are of three distinct classes: first, the bottom or meadow lands, usually possessing a rich black and somewhat heavy soil, lying next to the stream, always easily irrigated, and on that account generally taken by the first settlers; second, the bench-lands, rising terrace-like toward the neighboring mountains, possessing, as soil, a warm sandy loam, always easily drained, usually presenting no great obstacles to irrigation, and now being generally recognized as the land capable of the widest range of production, and being the least subject to frosts; and third, the high bluff lands already noted.

The virgin soil of the bench-lands is so mellow and easily broken up that we often see scraggy little mustangs, weighing from 700 to 800 pounds, pulling the plow as easily as they would in many long cultivated fields in the east; the strongly rooted stubborn turf, which at first always opposes itself in the east, is here seldom if ever encountered. Plowing for spring wheat commences in February, and the wheat is often sown during the same month. Montana wheat, by a recent comparative analysis at St. Louis, takes precedence of Minnesota spring or western winter grades. Oats are frequently raised weighing 44 pounds to the measured bushel. Exceptional yields of grain and vegetables are chronicled which, to the farmer on artificially fertilized soils in the east, would seem simply impossible. At the first territorial fair held in 1869, Col. Forbis, of the Montana legislature, took the first premium on a field of 20 acres of wheat which yielded 82 bushels and 37 pounds per acre. At a succeeding territorial fair held at Helena City, Mr. J. L. Ray, of Lewis and Clarke county, was awarded the first premium for the best crop of wheat, his average from a number of acres being 102 bushels per acre. Messrs. Forbis & Burton were awarded first premiums for the best barley, 113½ bushels per acre; best oats, 101 bushels per acre; best potatoes, 613 bushels per acre. The best single acre in wheat produced 113 bushels. The figures were sworn to by disinterested parties, as required by the agricultural society, and the appearance of sheaves on exhibition would warrant the yield claimed. The *average* yield of wheat is placed at 30 bushels per acre, twice as large as that of the great wheat state of Minnesota, and nearly three times as large as that of Ohio. Corn in the higher valleys is not always a success, the cool nights probably being the greatest drawback; but in such valleys as the Yellowstone, Bitter Root and Missouri, it was quite successfully cultivated in 1878. Specimens at the last territorial fair were unusually large-eared, and were from fields which yielded from 30 to 50 bushels per acre. All garden roots grow enormously large, and peas, beans, cabbage, cu-

cumbers, etc., attain great size and are of excellent quality. Irish potatoes weighing from 2 to 4 pounds each, rutabagas from 15 to 20 pounds, and turnips 30 pounds each, were among the exhibits of Gallatin, Bitter Root, and other valleys, the past season. Besides these hardy cereals and vegetables produced in all the inhabited valleys, we find some farms in the Bitter Root and other sunny basins where large and small fruits, tomatoes, melons, and even tobacco, egg-plant and peanuts are among productions which indicate a not very forbidding clime.

Lest readers may not at first glance realize the difference in favor of Montana in yields and prices, I append a comparison of average yields of cereals and vegetables here and in the east. I select the great agricultural state of Ohio as the victim of this comparison, taking her average yields for three years and giving those of Montana as estimated by some of the most careful and reliable farmers of the Territory:

KIND OF PRODUCE.	Prices in the East.	Prices in Montana.	Yield in the East per acre.	Yield in Montana per acre.	<i>This showing can be made in Montana on a farm that costs practically nothing but the labor of its owner in improving it — in the east, from land that costs \$40 to \$75 per acre. In Montana, sheep or cattle are matured at a total cost of from \$1 to \$3 per head, feed and shelter costing nothing, — in the east, feed, shelter and attention consume from one-half to three-fourths of the selling price of every animal.</i>
Bacon, per pound.....	5c	15c			
Barley, ".....	1 $\frac{1}{4}$ c	2c	19 bu	35 bu	
Butter, ".....	16c	40c			
Beets, ".....	$\frac{1}{2}$ c	4c			
Beans, ".....	2c	5c	24 bu	37 bu	
Cabbage, ".....	$\frac{1}{4}$ c	3c		6565 lbs	
Carrots, ".....	1c	4c			
Cauliflower".....	1c	4c			
Corn, ".....	$\frac{3}{4}$ c	5c	34 bu	37 bu	
Cheese, ".....	8	17c			
Chickens, per dozen.....	2 00	6 00			
Eggs, ".....	18	50c			
Flour, per cwt.....	3 00	4 00			
Green Corn, per dozen.....	5	25c			
Hay, per ton.....	8 00	12 00	1 $\frac{1}{4}$ ton	1 $\frac{1}{4}$ ton	
Hogs, per cwt.....	2 75	10 00			
Oats, per pound.....	$\frac{3}{4}$ c	2c	23 bu	45 bu	
Onions, ".....	1c	6c	208 bu	385 bu	
Parsnips, ".....	$\frac{1}{2}$ c	4c			
Potatoes, ".....	1c	1 $\frac{1}{2}$ c	75 bu	200 bu	
Peas, ".....	1 $\frac{1}{4}$ c	2c	25 bu	40 bu	
Rye, ".....	4c	2c	12 bu	35 bu	
Squash, ".....	$\frac{1}{2}$ c	4c		19,000 lbs	
Turkeys, live, per pound.....	7c	20c			
Turnips, per pound.....	$\frac{1}{4}$ c	1 $\frac{1}{2}$ c	150 bu	225 bu	
Wheat, ".....	1 $\frac{1}{2}$ c	2c	11 bu	30 bu	

In 1878 the different valleys of Montana, with their mere sprinkling of farmers, produced about 400,000 bushels of wheat, 600,000 of oats, 50,000 of barley, 12,000 of corn, 500,000 bushels of vegetables, and 65,000 tons of hay, the total value of agricultural products being not less than \$3,000,000. A ready market

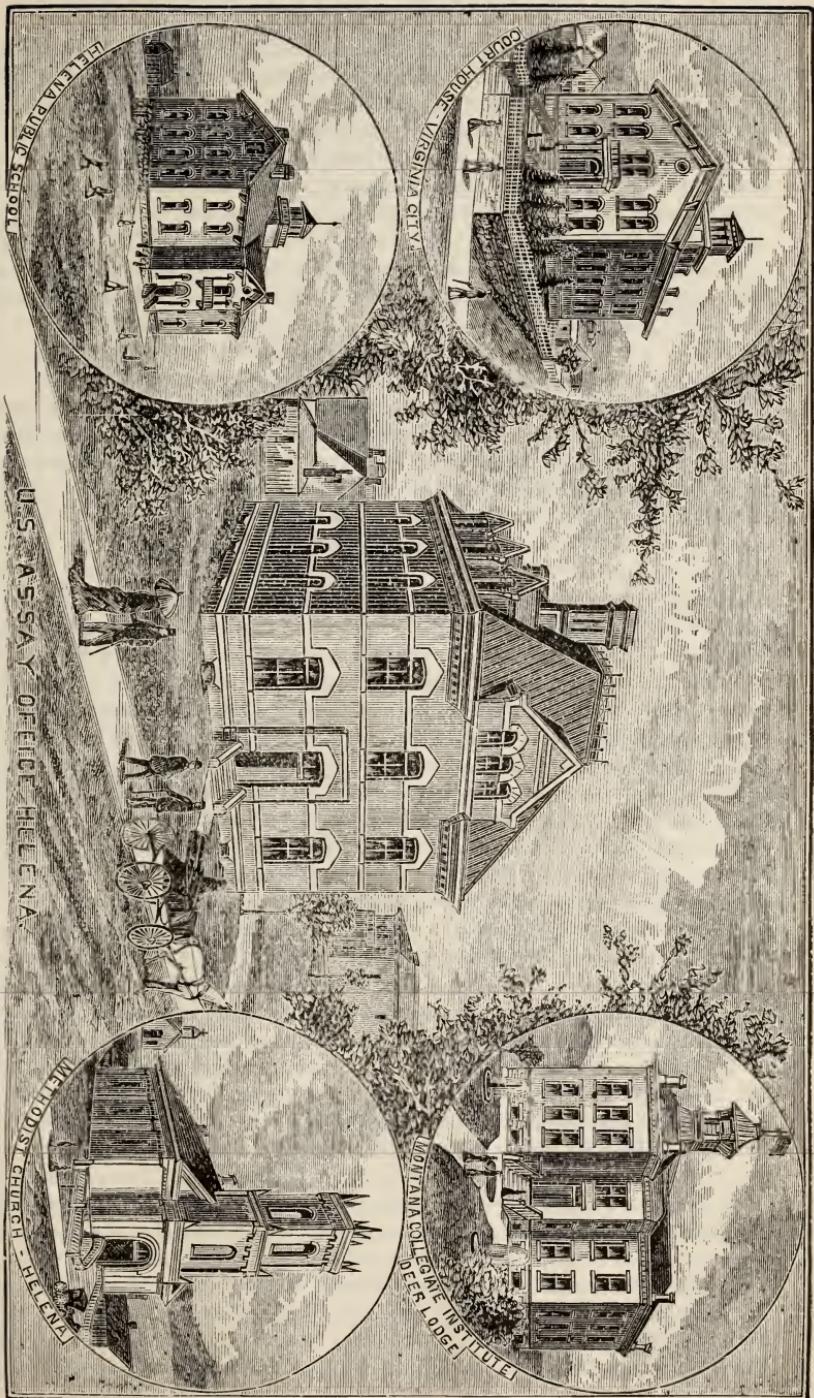
has always been afforded by the non-producing population in the mines and cities, and by the numerous military posts. The constant increase in the magnitude of mining and other operations in all parts of the Territory justifies the belief that any considerable surplus of produce cannot be raised in Montana for years to come, and until that time prices must remain from 50 to 100 per cent higher than in the "States." The following were ruling prices paid farmers for produce in different Montana cities in January, 1879: Flour, \$4.75 per 100 pounds; oats, 2 cents per pound; wheat, 2 cents; hay, \$12 to \$14 per ton; potatoes, 1½ cents per pound; onions, 6 cents; butter, 45 cents; eggs, 60 to 75 cents per dozen; squash, 4 cents per pound; cheese, 16 to 20 cents; beets, 4 cents; cabbage, 5 cents; carrots, 3½ cents; parsnips, 4 cents; turkeys, \$3 to \$5 each; spring chickens, \$6 to \$7.50 per dozen.

I firmly believe that no land under the sun offers such a favorable field for diversified rural industry as Montana. Take here, in connection with grain-raising, the production of poultry, eggs, butter, pork, vegetables, and similar items now almost unnoticed as "not worth bothering about," and the industrious and frugal farmer and housewife, managing as of necessity do those in the thickly settled states, should soon make themselves independent. It is often almost impossible in winter to secure fresh eggs at 75 cents per dozen in Montana cities, and during the past winter I have seen 90 cents freely offered at Helena. Butter ranged from 40 to 60 cents the entire winter, and it was frequently impossible to secure a good article. The Montanian who desires to celebrate Christmas in the time-honored way—turkey and all—will make a sad inroad on his bank account; as for spring chickens—at from 50 cents to \$1 each they *might* be of recent origin, but unfortunately that class is never numerous enough to "go 'round." There seems to be nothing in the climate to prevent this industry, but the greater cares incident to the production of grain and live stock seem to have thus far nearly monopolized the attention of settlers.

The following consolidated report of vegetables raised in Company gardens at Fort Ellis, Gallatin county, during the season of 1878, will convey an idea of the profits of market gardening in the northland. It is worthy of careful study, especially by those who are familiar with the yields of artificially fertilized soils in the East:

Company and Regiment.	No. of Acres.	Potatoes.		Onions		Turnips.		Carrots.		Beets.		Parsnips.		Cabbage.	
		Bu.	Bu.	Bu.	Bu.	Bu.	Bu.	Bu.	Bu.	Bu.	Bu.	Bu.	Bu.	Heads.	
F, 2d Cavalry.....	7½	1100	90	500	60	50	10	3610							
G, "	5	550	60	60	35	15	20							2500	
H, "	6	1200	130	35	40	40	25							3300	
L, "	5	700	50	150	25	.....	.....							2300
G, 7th Infantry ...	3	315	6	40	12	.....	20							800
Total	26½	3865	336	785	172	105	75							12500	

General Brisbin states that the value of the several articles, if they had to be bought in Montana, would be about as follows: Potatoes, \$3,865; onions, \$2,352;



U.S. ASSAY OFFICE - HELENA

REPRESENTATIVE PUBLIC BUILDINGS OF MONTANA.

REACHED VIA THE UNION PACIFIC AND UTAH & NORTHERN RAILROADS.

turnips, \$85; carrots, \$206.40; beets, \$315; parsnips, \$225; salsify, \$9.40; cabbage, \$125; total, \$7,182.80, from a 26-acre field. Rutabagas raised the past season weighed as high as 17½ pounds each, without the tops. One potato weighed 4 pounds, another 3 pounds 4 ounces. All products were pronounced by General Brisbin among the best for size and flavor he had ever seen. The soldiers produce all the vegetables they need, with a surplus for sale, and live better than at any post in the country. The soil is a rich black loam, and has needed very little irrigation.

Fruit Growing in Montana.—Few regions in the Rocky Mountains can boast of a greater variety or a finer growth of wild fruits than Montana. Three varieties of whortleberries, raspberries, gooseberries, strawberries, service-berries, Oregon grapes, choke-cherries, buffalo-berries, and in some localities plums, are prominent kinds which almost unfailingly yield well. In most localities east of the Rockies where the soil and climatic conditions are favorable to the growth of such an array of wild fruits, it is a foregone conclusion that certain tame varieties will flourish. However, in no new country is any interest so slowly taken hold of as fruit-growing. Montana is only an average example of this. But I am gratified to state that I have visited several Montana orchards in which were the unmistakable golden, luscious proofs that the new era is dawning.

Far up in the northwestern corner of the Territory—yes, north of the forty-sixth parallel!—in Bitter Root Valley, we came upon the splendid grain and fruit farm of Hon. E. W. Bass. In this short article, much as I wish, I can say nothing of the beautiful stretches of meadow, of the broad fields of ripened grain—for it was in early autumn—or of the hundred attractions surrounding the elegant country home, but at the outset can state the very interesting fact that I plucked some of the largest and most delicious apples, plums, grapes and Siberian crabs I have ever seen. Mr. Bass has 3,000 apple trees from two to six years old, of which number 1,000 are flourishing in the orchards. Five or six five-year-old trees bore quite freely, and 500 have reached bearing age. The Rambo, Willow-twig and the Red Astrachan seem to be the favorites thus far, although 50 different varieties are ready to bear. Grafts made a growth of five feet during the past season. About twenty transcendent crab trees were loaded with ripe fruit during our visit—some so full that props were necessary to keep their branches from breaking. Over 200 pounds of fruit had been sold from one of these during the season at 15 cents a pound, or a total of *thirty dollars for one year's crop of a single tree.* Of 25 fine pear trees several Bartletts bore last year. A nice little orchard of tame plums near by was a feast for eyes, and a disturber of gastric juices at the same time. Among these trees were some fairly twisted and groaning under the weight of the fast-ripening fruit. The greengage plum succeeds admirably here. A trellis of Concord grapes, with here and there its beautiful fruitage, was not lacking. Mr. Bass grows all the small fruits. Of these over 1,000 boxes of strawberries, and 500 gallons of currants, gooseberries, raspberries, etc., were marketed during the season at prices ranging from 40 cents to \$1 per gallon.

On the opposite side of the valley, some six miles distant, Messrs. T. W. and Benjamin Harris, who have farms adjoining each other, have 75 bearing apple trees, gardens of gooseberries, blackberries, strawberries, currants, etc., from which they marketed a nice lot of fruit last season. They had some forty bush-

els of apples, principally of the Early Harvest and Newton Yellow Pippin. They also had greengage and Chickasaw plum trees so full of fruit that the longer branches were bent to the earth.

Again, at Missoula, some twenty-five miles distant in the same county, Geo. B. Hartman, Esq., showed us through a nice little orchard of apple and plum, and exhibited some fine trellises of bearing grapes. Here, also, Mr. Alfred J. Urlin has a fine thrifty orchard of 1,000 three-year-old trees of different varieties. I am reminded that near Missoula, on the farm of A. G. England, I ate some delicious ripe strawberries, fresh from the vines, *on the 8th of September!* Mr. England calls them the everbearing strawberry, and says he never fails to pick fine ripe berries from that patch at any time from June till November. The plants originally came from Illinois.

In Deer Lodge county, nearer the center of the Territory, and at a much greater altitude than that of the localities above noted, Mr. Addison Smith reports: "We raise, in this county, currants, gooseberries, blackberries, raspberries and strawberries; apple, pear, plum and cherry trees grown by me are doing well. I planted an apple tree in 1873, which was eaten to the ground the same year by cattle. It came up in 1874, and in 1878 was full of blossoms and bore several apples, which matured before frost."

In the suburbs of Helena, at an altitude of 4,300 feet above the sea, Mr. D. W. Curtiss has the largest tract devoted to the cultivation of small fruits in the Territory. Nine acres are planted with strawberries, and he has 8,000 currant bushes, 5,000 gooseberry, a few raspberry, and other plants, his entire tract consisting of 24 acres. Mr. Curtiss states emphatically that he can produce any of the smaller fruits better than in Ohio, his old home, if let alone by the grasshopper. With the assistance of one man he last year produced 7,000 quarts of strawberries, a fine crop of gooseberries and raspberries, and has ripened 1,000 bushels of tomatoes in one season. His sales of fruits last year ran as high as \$200 per day at the best season. Strawberries and other small fruits sell readily at from 40 cents to \$1 per quart, and it is a common pastime of Helena citizens to walk through his grounds and pay 50 cents for the privilege of eating all the fruit they wish while there. Tomatoes sell at from 10 to 25 cents per pound. Mr. Curtiss came from Ohio to Helena ten years ago, and almost penniless, embarked in small fruit culture. He has now one of the finest fruit farms in the west, from which he markets from \$4,000 to \$7,000 worth of fruits and vegetables per year. He calls Montana "the best poor man's country in the world." He has lost many plants by grasshoppers, but considers himself a good many thousand dollars ahead yet.

I might continue to quote experiences,—as several others are in mind,—but surely the above should disprove the notion, if it is entertained, that people of the east moving to Montana must forever leave behind such valuable luxuries as fruits.

The only serious drawback Montana farmers have ever contended against is the grasshopper. These pests have never yet committed such wholesale destruction in the mountain land as in the prairie states, although individuals have at times lost all their grain. The 'hopper seems to descend on the Montana valleys for three or four consecutive years, and then almost entirely disappears for a similar period. He delights in making short calls here and there. One farm may be devastated, while the next will be left unharmed. For seven years

none were seen in the great Bitter Root and other valleys in western Montana. As destruction of the crops has never been general or complete, there has of course been no suffering among those whose farms were visited, and most wheat-growers agree that they can well afford to lose every third crop as long as yields and prices remain so favorable in the good years.

As considerable has been said in the foregoing concerning large average yields of grain fields in Montana, the reader may be interested in noting a few names of farmers whose experiences for the past year or two have come under the observation of the writer. Following are the names of several prominent farmers of different valleys, with size of fields, amount of grain threshed, the average yield per acre for one season, and the selling price of the crop:

Name.	Location.	Field in acres.	Crop and Yield — bushels.	Av. per Acre — bushels.	Value of Crop.
A. G. England	Missoula Valley	160	Wheat, 7,000..	43 $\frac{1}{4}$	\$ 8,400
Robert Vaughn	" " Oats, 2,000..	40	Oats, 2,000..	50	1,200
M. Stone	Ruby Valley	4	Oats, 410..	102 $\frac{1}{2}$	246
Brockaway's Ranch	Ruby Valley	100	Wheat, 6,000..	60	7,200
Brigham Reed	Yellowstone Valley	8	Oats, 600..	75	360
Mariou Leverich	Gallatin Valley	6	Oats, 620..	103 $\frac{1}{2}$	362
William Reed	" " Wheat, 1,150..	23	Wheat, 1,150..	50	1,380
Charles Rowe	Prickly Pear Valley	50	Oats, 3,500..	70	2,100
Con. Kohrs	Missouri Valley	23 $\frac{1}{2}$	Wheat, { 1,200..	45	1,250
John Howe	Deer Lodge Valley	11	Oats, 1,200..	100	720
Robert Barnett	Gallatin Valley	85	Oats, 4,982..	57	2,989
S. Hall	Reese Creek Valley	48	Wheat, 2,200..	45 5-6	2,640
	Ruby Valley	400	Wheat, 10,000	50	11,000

Mr J. Y. Stewart, a thrifty farmer of Prickly Pear Valley, last fall put in his granaries 3,080 bushels of grain, all from an 80-acre field. Of this there were oats, 1,230 bushels; barley, 831 bushels; Wheat, 841 bushels; peas, 178 bushels. Such a yield, however, is not an exceptional one in the Territory, as proportionately good ones are enjoyed by farmers in many a valley.

STOCK RAISING AND DAIRYING.

As a grazing region Montana has no superior, and I doubt if an equal. Her 38,000,000 acres of grazing lands are covered with nutritious bunch, buffalo and other grasses, whose fattening and bone and muscle-producing qualities offer a theme for endless surprise. Of all the grasses which grow without cultivation in any clime on the face of the globe, it is doubted if there is any which possesses as much nutriment the year round, or upon which stock will grow or fatten better than the bunch grass of Montana. Clover, blue-grass, and the far-famed mesquite of Texas, sink into significance when compared with this. It often follows in thick, even carpets through valleys and over mountain tops for hundreds of miles at a stretch, curing in the mild, pure atmosphere as it grows, and imparting a flavor to beef or mutton, in summer and winter, that the best forage found in the states cannot produce. Never, in all my ramblings, have I tasted such delicious, juicy, tender steaks, as in the homes and hotels of Montana. Hon. R. W. Raymond, United States Commissioner of Mining Statistics, who has traveled extensively in Montana, says on this subject: "To be more exact I might say that to pasture a horse on bunch grass is like *giving him plenty of good hay with regular and liberal feeds of grain*"; while Prof.

Cyrus Thomas, in his official reports on the agricultural resources of the Territories, declares, "without injustice to any other part of the west, it may be truly said of Montana that it is *the best grazing section of the Rocky Mountain region.*"

There are several different varieties of bunch grass, two of which are the most popular and generally known; one with a blade that resembles blue-grass, and stems which run up in a cluster, bearing seed much in the same manner that blue-grass does, except that it does not form a tuft, but grows in bunches, and is found upon the high, rolling bench-lands, parks and mountains. The other kind grows more frequently upon the first bench, next to the bottoms; the blade is sharp, the heads all turn to one side, and from the broad boot on the seed-stalk it is often called "flag-grass." As to quantity per acre, there is but little or no difference. The latter is usually preferable for cattle, but the former is thought to be best for sheep, yet either is very fine.

These grasses start forth in early spring, and grow very rapidly. If there have been heavy snows during the winter, and the ground is well saturated with water, or if there are frequent rain or snow storms as the spring opens, the crop of bunch grass is very large. In ordinary springs the grass is headed out by the 1st of June, and the boundless prairies and hills are beautiful as a waving field of grain. The height of the grass is usually from twelve to eighteen inches, with blades from eight to twelve inches long, yet under very favorable circumstances it grows much taller. I have seen miles and miles of bench-lands along the mountain slopes which were one vast sea of bunch grass fully thirty inches high, and thick enough to mow. By the last of June the heads ripen, and in ordinary seasons the blades are all nicely cured by the middle of July, and the whole landscape is brown as a field of grain ready for the sickle, and would burn if set on fire. In exceptional seasons the blades of the grass remain green and continue to grow until September. There is, however, no advantage in it remaining green, as there seems to be no perceptible difference in the fattening of stock. In fact, many incline to the opinion that the early cured is the best. There is no time of the year in which stock take on fat faster than in the latter part of summer and early fall. The cured grass retains its nutriment all winter, from the fact that there are no drenching rains in the fall to bleach it, the light snows which come in early winter, and melt off soon, only serving to moisten it and make it more palatable. During the winter the low lands and sharp foot-hills are for the most part free from snow. Usually the snow is chased away by the wind, except that which is driven into the thick clusters of grass, and lies bedded among the old dead blades of other years. In grazing, the stock gather up more or less snow, which serves in a great measure as a substitute for water. When the snow departs in the spring, stock go to the foot-hills, following up the receding snow; the grass which lies covered all winter is relished best; besides, the young crop starts first and grows fastest among the sharp hills. In the states green grass in early spring appears to have a weakening effect upon stock, but here it comes forth among the old crop, and is so well mixed that there is scarcely any difference between it and dry feed.

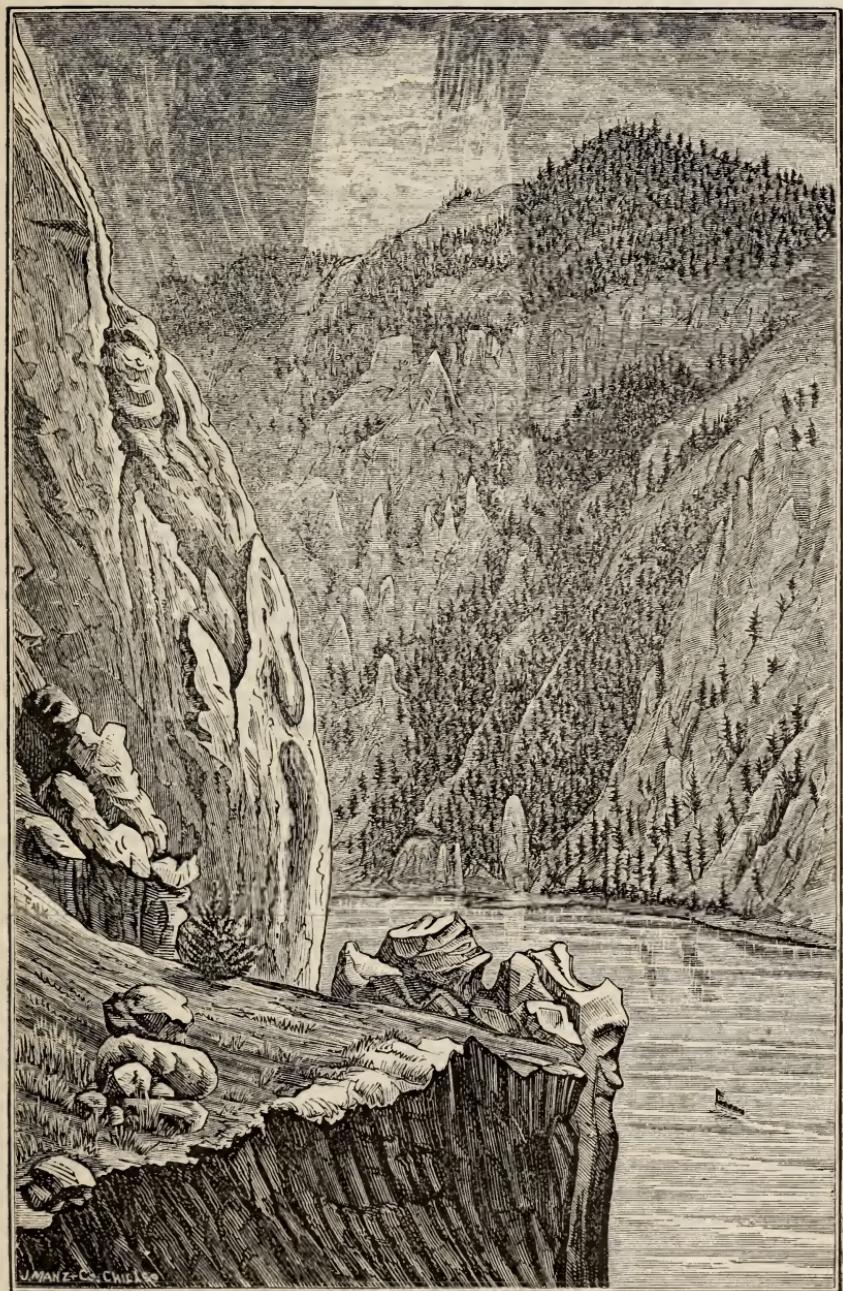
The question often arises, will this grass stand close grazing, or, like some wild grasses in the east, be utterly destroyed by the clean cropping of the millions of live stock which are destined to soon roam these natural pasture lands. Mr. R. N. Sutherlin, editor of the *Montana Husbandman*, an excellent authority

on such matters, and to whom I am indebted for valuable data incorporated in this article, answers the question as follows: "In all that has ever been said or written of Montana, every one has praised her bunch grass, though many have been so shortsighted as to claim that it would not stand pasturage, and that in a few years our plateaus and mountain slopes would present a bare, bleak appearance as do the red hills of California. But experience and practical test have proved the fallacy of such conclusions. It is a perennial, yet when the root becomes killed the seeds are so generally distributed by the wind that a barren tract adapted to its growth soon becomes covered.

"In 1865 the hills around Virginia City were grazed off perfectly bare for a distance of six or seven miles in every direction, and many asserted that in a few years it would be a barren waste. To-day those hill-sides support as luxuriant a growth of feed as they did previous to the habitation of the country by the whites. In 1866 there was no place within a radius of eight miles of Helena where one could turn out an ox train to graze. The grass was eaten off smooth to the ground. To-day the feed in this section is good, notwithstanding its constant pasturage in consequence of its being in such close proximity to the city and the thickly-settled valley. The soil of our mountains and adjacent plains is strongly impregnated with lime, which accounts, I think, for our wonderfully tenacious and nutritious grasses, as well as our extraordinary production of cereals."

Western men differ very widely as to what variety of grass is buffalo grass. A short, curly grass, which makes a considerable tuft, is generally known as buffalo grass. It rarely gets over three or four inches in length, and grows on bench lands and along the creek bottoms where the soil is dry. Two varieties of sage—one so black that it looks as if it had passed through fire, and the other almost white, growing from six to twelve inches high—are found in different localities, and are among the most valuable of the native herbs for winter grazing. In most other Rocky mountain regions wild rye is found growing luxuriantly in the lowlands, or along water-courses, while in Montana we find patches of it near mountain summits so exuberant that a horse could hide himself in it.

Cattle Growing.—In the "old West" and eastern states the stock grower is obliged to work hard for six months of the year to raise food to keep his cattle through the severe wet winters, while here cattle are especially self-reliant, and if left to take care of themselves, winter and summer, will grow while their owner sleeps, and come off the range, even in the spring, in good condition for market. Of the thousands of head of oxen which are worked hard by different freighting companies, from April until December, and are then turned out to forage for themselves until their work again commences in early spring, none have ever tasted a mouthful of hay or grain. No cattle but a few kept up in winter for dairy purposes are ever fed or sheltered. The expense of caring for cattle in Montana, in herds of 1,000 or more, is about sixty cents per head per annum. Including taxes, this makes a full grown \$30 steer cost *a total of \$3 for care and feed.* The same animal in Illinois, be he scrub or thoroughbred, would cost his owner two-thirds of his selling price for feed alone. Cattle of all ages and sexes in Montana, in herds of any size, sell readily at an average of \$14 per head; beef steers alone command \$20 to \$28; yearlings, either sex, \$10; two-year olds, \$12.50; cows, for breeding purposes alone, \$15 to \$20. Montana



GATE OF THE MOUNTAINS, NEAR HELENA, MONTANA.

REACHED VIA THE UNION PACIFIC AND UTAH & NORTHERN RAILROADS.

cattle are all from good American grades — there is not a full-blooded Texan, I believe, in the Territory — and are being rapidly improved by the introduction of the best short-horn sires money will buy. The beeves are eagerly sought by outside buyers, and the fact that three-year-olds dress from 750 to 900 pounds is pretty good evidence that the stock possesses a large frame, and is not stunted at all in its growth on account of the winters.

Of course in this vast free pasturage no one need really own an acre of land, and, thus far, few have cared to. But all stockmen have headquarters as near their range as is practicable. This is called the ranch, and usually consists of a plain log cabin, and a large corral or pen in which stock can be held at branding time. What extent of the boundless grass-lands surrounding are utilized by the owner depends entirely upon the size of his herd and his inclination to let cattle roam and care for themselves. It is true that ranch sites are sometimes better improved and herders employed; but to feed, water, shelter or salt the steer of the period would be a sad innovation upon the all-prevailing custom of letting said steer shift for himself. The improvements need not cost more than \$250 — not that, if the owner will rely largely on his own muscle. The additional expense will be the cost of living, if the owner does his own herding, and this will vary from \$250 to \$400 per year; if herders are employed, they are paid about \$40 per month and board. One man can easily care for 1,000 cattle, except during the "round-up" period, which here occurs twice per year, lasts about two weeks each time, and will require three or four extra men during that time. I have before me the statement of a stockman who commenced with \$3,500, buying 100 head of cows, putting up a neat log cabin, and reserving enough of the capital to pay his expenses for one year. At the end of the fourth year the increase from this little herd, at a low valuation, was worth \$8,000. Another statement made for me by a well known stockman of Helena shows a net profit of \$42,500 made in six years from an investment of \$13,500. The loss from all causes has never yet been two per cent per annum, and some quite severe winters have been experienced. The average profit realized can without any doubt be placed at two per cent per month on all capital invested in cattle in Montana, and indeed I know of several of the most prominent stock owners who borrow money at that rate of interest, and have a respectable margin left. Con Kohrs, one of Montana's cattle kings, who commenced business without a dollar as a butcher, near Deer Lodge, a dozen years ago, states that he often finds it profitable to borrow large amounts to invest in cattle at two per cent per month interest. Mr. Kohrs owns some 8,000 head of cattle, and markets about \$40,000 worth of beeves annually. Men who put a few hundred dollars into cattle five or six years ago have become rich almost before they could realize how wonderfully the profits multiply in a region where food and shelter for their herds cost nothing. Concerning this almost universal experience, and the chances for duplicating it in future, Mr. S. T. Hauser, president of the First National Bank of Helena, in an interview which I had the pleasure of having with him last fall, said:

"Four or five years ago, if a man came here to borrow money to put into a band of cattle or sheep, we would have laughed at him. Now we are doing business with a hundred or more stockmen and are glad to loan them money about as quick as we know they have stock and are inclined to pay honest debts. We loan at $1\frac{1}{2}$ and 2 per cent a month interest and we know their

profits are often larger than ours. We know all a man has to do is to brand his cattle and go to sleep; he needn't wake up for a year and still his ability to pay will be unquestioned. Of probably a hundred men who borrow money here at these high rates of interest to go into the cattle business we know of none who are not on a short and sure road to fortune. Many of these, too, bought cattle when they were worth double what they are now, and consequently did not have as good a show as a man would who buys now. There was Con Kohrs and Will Swett who had to pay from \$35 to \$50 per head for their breeding cattle, while now they can buy at \$15 to \$18. But both are rich—Kohrs has some 8,000 head and has sold thousands of dollars' worth. Now there is much more show for a poor man. The business certainly beats 2 per cent per month compounded. I suppose people of the east will call us all crazy for making such statements, but we can't help that. These are genuine facts and experiences. A few days ago a young man came into the bank and passed over \$30,000 as a deposit. He asked me whether I remembered him, but I couldn't remember his face. He said eight years ago he had tried to get some sheep from my brother on shares, or buy them on time. But brother wouldn't trade. He had only \$250 in the world and put it in cows. Subsequently he borrowed a little more at $1\frac{1}{2}$ per cent. He has just sold his herd and has \$30,000 clear money! Then there was a young man in charge of D. G. Flurry's herd in Sun River Valley. He was to care for them and get one-fifth of the increase. That was three years ago, and the young man without having a cent to start on can sell his interest for \$15,000, or \$5,000 a year for his work. Room? Why, we have hardly more than a cow for every square mile of pasture in the Territory, and you can ride a whole day over some of our best ranges and hardly see an animal. Risk? there is almost none. We have passed through the worst winter known in the country for 20 years—in fact, trees many years old were frozen that winter, and the loss was less than 2 per cent of all cattle in Montana. Flurry got here from Texas with his cattle very poor, just in time to go into that terrible winter. Remember his cattle were used to a warm climate, were not acclimated poor, etc., but they came out in good shape with a loss of 2 per cent. I. G. Baker & Co., in figuring on a large contract for transportation from Ft. Benton, 400 miles north into the British Possessions, calculated upon losing all their work cattle and left a good margin accordingly. Their trains got up to the British posts, on the Saskatchewan, 500 miles north of here, about Christmas, the oxen having had no feed but grass grazed by the way and being very poor. They were turned out to care for themselves, in that far northern country, and in spring were found fat, thus making a fine speculation on the contract.

"There will be some 20,000 head exported this year and this is just the beginning, for our largest dealers have only been in business a few years, so that the three and four-year-old cattle until recently have been very scarce. Next year these exportations must be tripled or quadrupled, and so on in future. We who had a little money a dozen years ago were short-sighted not to take hold of the stock business, but are a good deal worse if we don't take hold now.

"We export 1,000,000 pounds of wool this year—a small item of course, but remember that four years ago we had barely commenced wool-growing and not 100,000 pounds were exported. No money, comparatively, has been invested in our mines. They have had to pay for themselves in most cases or were deserted, no matter how good the prospects. See the capital which has always poured into

California, Colorado and Nevada. It cannot be said of Montana as it has been of those sections, that a dollar has been put into the ground for every dollar taken out."

At present the ranges seem almost limitless, and as Mr. Hauser has indicated, are as yet principally trodden by the hoof of the buffalo, elk, antelope and deer. To be had "without money and without price," and offering such inducements for their utilization, we cannot but wonder that they are occupied only step by step as the herds naturally increase, instead of being speedily filled by cattle driven from crowded and less desirable pasture lands. Following is a statement of the number of cattle in the Territory each year since 1872, and the exports. It is compiled from reliable data, and will give at a glance the history of the business in Montana for the past six years:

	Cattle in Montana.	Cattle Export.	Value of Export.
1873.....	86,944		
1874.....	102,058	3,000	\$ 60,000
1875.....	118,603	5,000	110,000
1876.....	143,317	6,000	132,000
1877.....	182,659	10,000	220,000
1878.....	250,000	22,000	440,000
Total export and value.....		46,000	\$962,000

Of the 250,000 stock cattle now in Montana, probably not a thousand have ever tasted hay or grain, or have seen a shed. All Montana cattle men agree that if fair prices prevail this year, the export will easily double that of 1878 in numbers and value. The reason of this, as already indicated, is quite apparent. Most of the breeders who have engaged in the business on the largest scale only commenced three or four years ago with young cattle, and have had no increase old enough to ship until now. Half a million dollars' worth of cattle exported in 1878, and a million dollars' worth in 1879, from a few score of breeders, are figures more eloquent than words, indicating the money which an industry like this is putting into circulation. The principal route to market is that leading down the Yellowstone to Fort Custer; thence to Forts McKinney, Reno and Fetterman; and forward from the latter named post to Pine Bluff, a station fifty miles east of Cheyenne on the Union Pacific railroad. This road furnishes an abundance of excellent grass, and plenty of good water. The cattle reach the railroad in fine condition, and are shipped to Chicago, where they usually land in October or November. The drive from Sun River or other prominent valleys to the railroad occupies about two months.

Dairying.—Climate, pasturage, water, and an unequaled market for dairy products, all combine to render dairying here one of the most lucrative and satisfactory pursuits. It is rarely that we find absolutely poor butter or cheese in Montana—it seems sheer crime to make it so with such bountiful facilities—and a large proportion would rate as "gilt-edged" almost anywhere. Cows cost nothing for their keep, and the product of butter or cheese is a clear gain, as the increase in stock will pay all expenses. I am personally acquainted with several Montana dairymen who commenced four or five years ago with rented cows, and not a dollar of capital. They are to-day the possessors of fine herds, good ranches, and worth from \$5,000 to \$10,000 each—all made by good honest labor in the corral and milk house. Dairy cows cost about \$30 per head, or

they can be rented by giving the owner the increase and one-fourth of the butter or cheese manufactured. Of course, dairying is generally carried on only during the seven or eight months of spring and summer, as few provide even so much as hay for cold weather, and when winter comes, the cows have about enough to do to keep in good flesh. The number of cows milked in Montana is placed at 10,000, and the product of butter and cheese in 1878 at 1,000,000 pounds. Butter sells at from 35 to 50 cents per pound, and cheese at from 14 to 20 cents.

Sheep and Horses.—The rapidity with which Montana has become the land of the golden fleece is an open secret of the cause of much of her thrift. Previous to 1873 there were probably not a thousand sheep in the Territory. The snug little business represented below is, then, a growth entire of only six years. The figures are mainly from reports of assessors, as are those on numbers of cattle, and in every case are known to be considerably too low. The value of sheep and amount of wool clip per head has been steadily increasing, and nearly all the flocks are now either high grade merino or cotswold. Samples of wool sent from Gallatin county flocks the past season to Boston, for classification, were by the best judges pronounced the finest ever received from the Rocky Mountains—second only to the very highest classes of wool raised in the United States. Fleeces average six pounds, and the mutton commonly served in Montana is the best I have ever tasted. It should be stated here that some 40,000 sheep were brought into the Territory by home capital during the past summer and fall from other states and territories:

	Number Sheep.	Value.	Wool Clip, lbs.
1873.	10,597	\$ 33,699	43,000
1874.	13,947	46,327	61,200
1875.	20,790	65,489	90,000
1876.	51,558	148,894	257,800
1877.	80,000	234,864	400,000
1878.	200,000	650,000	1,000,000

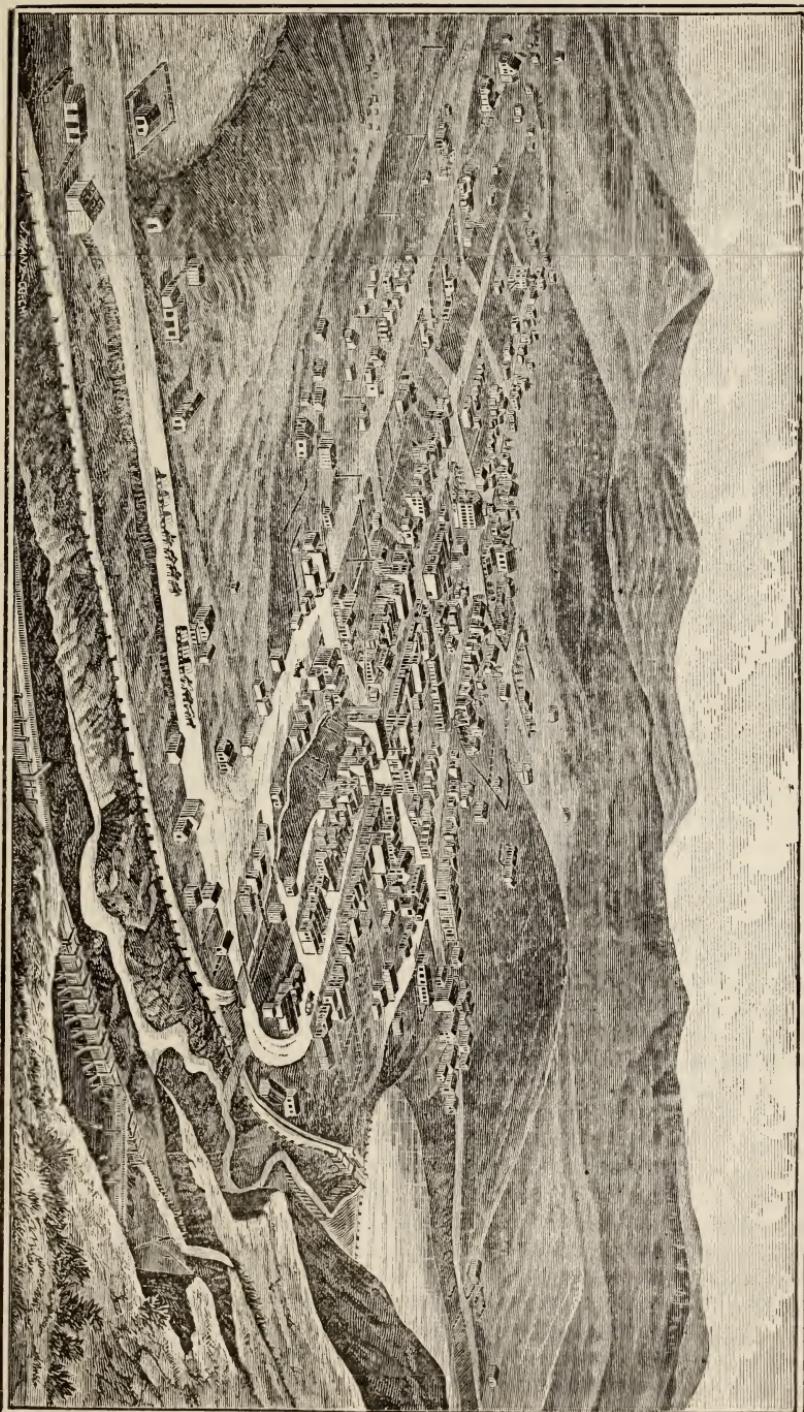
Sheep receive a little more attention than cattle, being sometimes provided with sheds in winter, but only at rare intervals receiving hay or other food, save that gathered by themselves. The most prominent wool growers put up hay regularly every season, in anticipation of "that bad winter" which is yet to appear. Cook Bros., of Smith River Valley, have followed this plan season after season for five years, and they have only fed their band *five days during the whole period*—their decaying haystacks all over their meadows pointing to the moral most forcibly. Even if the hay should be fed a month or two in winter, it costs next to nothing. It needs no argument to prove that these high, dry localities in the northwest are the natural habitat of the sheep. It is next to impossible to originate disease among sheep here, where they are out in the sunshine every day in the year, where there is no moisture to continually saturate the hoof and produce foot-rot, or to saturate the fleece and invite scab and other skin diseases; browsing where it is never muddy, the fleeces never get dirty or matted, and while rarely washed before shearing, the wool is as clean as that which is washed in most of the states. It is noticed that a much thicker and better quality of wool is produced from sheep which are driven here from other territories a year after the animal has reached the Montana pastures than was clipped four or five hundred miles farther south. The hair almost entirely

disappears, and is supplanted by a clean, long and heavy coat of excellent fibre.

The profits in wool-growing are by many placed higher than in cattle-growing, and even the more conservative breeders figure up a net profit of from 25 to 35 per centum per annum on all capital invested. All agree that the wool clip will pay every item of expense, leaving the increase a clear gain. The loss from all causes is estimated at from 2 to 3 per cent. The annual increase of flocks, composed of all ages and sexes, is placed at 48 per cent, and the increase of 1,000 ewes, two years old and upwards, will range from 80 to 115 per cent — probably averaging 90 per cent. Sheep sell readily at from \$3 to \$4 per head. A herder easily cares for 2,000 head. I have a statement of Davenport, Ray & Co., prominent cattle and wool-growers, of Sun River Valley, which illustrates the enormous profits arising from a careful management of this industry. They leased 1,000 ewes to a man who possessed no capital but his muscle, in 1875 — the party taking them agreeing to return the original number of ewes in four years, with half of the total increase, and to deliver one-half of the entire wool clip. In 1876 the increase was 1,050; in 1877, 1,250; in 1878, 1,400. In July, 1876, the owners received \$650 for their half of the wool clip; in 1877, \$1,000; and in 1878, \$1,100. At the present rate of increase the herd will number 7,000 in the summer of 1879 (or at the end of the four years), worth at least \$22,000, and the wool clip of this last year will be worth \$2,250. The owners will thus have received, in four years, \$5,000 worth of wool and 3,000 sheep, worth \$10,000, or a return of \$15,000 in four years, from an investment of \$4,000, and will have their original band of sheep besides. The rente: had not a dollar at the start, but has now a \$10,000 flock of sheep and a well-improved ranch.

As a test of the Montana climate, I will add that in the extremely cold winter of 1874-5 these gentlemen wintered 3,500 sheep on Sun river without any sheds. Although mercury at one time indicated a temperature of 40° below zero — something almost unparalleled at any altitude in Montana — they lost only 26 head out of the 3,500, and 14 of these were killed by a \$500 shepherd dog in his vigorous efforts at keeping the band together in a severe storm. During this unusually severe winter never did more than 140 head — a band of old and infirm sheep — ever receive hay at one time, the flock keeping fat by their daily browsing on the range.

A well-known and thoroughly reliable resident of Helena thus writes of the experience of Governor Potts at wool-growing: "A better idea of the profits of sheep-raising in this Territory can be conveyed by an illustration, and I select the experience of Hon. B. F. Potts, Governor of Montana. Some time ago he purchased a ranch on the Dearborn river, 50 miles north of Helena. Last October he bought and placed upon it 4,000 sheep, at a cost averaging \$3 per head. He subsequently sold 400. Of the remainder 2,700 were ewes. During the months of April and May these gave birth to 2,900 lambs. 200 were lost by exposure in the severe snow-storm that visited the Territory that spring, to compensate, it would seem, for a very mild winter, but the number of twins equaled the loss, and the net product, as appears from the above statement, was 100 per cent of the ewes. It is estimated that when a lamb is dropped it is worth \$2, and that when three months old it is worth \$3. The profit on the increase may therefore be put in round numbers at \$5,000. The Governor has just completed his shearing. He sheared 3,600 sheep, and the average clip was six pounds per



VIRGINIA CITY, MONTANA.
REACHED VIA THE UNION PACIFIC AND UTAH & NORTHERN RAILROADS.

head. The wool is worth 26 cents in the eastern market, and the cost of transportation will scarcely exceed 4 cents. The proceeds of this clip will therefore be about \$4,750. A return of nearly \$10,000 in less than one year, on an investment of \$12,000, is certainly a most seductive showing."

The production of a better class of horses, and also of hogs, is beginning to receive some attention. Horses are even more hardy than cattle or sheep; they have the advantage of being able to paw away the deepest snows that may cover their pasture, and they never fail to take good care of themselves in the worst storms. The correspondent just quoted offers these practical suggestions on this business: "What are wanted here are good draught horses, and the market for such would be limitless, at paying prices. Suppose a man, probably in connection with some other business, such as sheep-raising or raising grain, to buy 50 brood mares (half-breed), which he can procure at \$30 each, and one draught stallion, costing \$1,000. He will thus have invested \$2,500. He need be at no expense for feeding or stabling, except in the case of the stallion, and at very little expense for herding, if he gives the business his personal attention. The average of colts is 80 per cent of the mares, so that at the end of the first year he would have 40 colts, worth \$20 each, making \$800, a return of over 30 per cent on his investment. Carry this computation forward, supposing him to sell off his geldings when they were four years old to pay expenses and to buy additional stallions, retaining the mare colts for breeders, and it will be seen that in five years he will have a band worth at least \$10,000. Mr. Storey placed 200 mares on his ranch in the valley of the Yellowstone only a few years ago, and now has a herd of 1,200, worth an average of \$75 each, besides having sold more than enough to pay all expenses." There are about 50,000 horses in Montana, a large proportion of which are the regular "bronco" or mustang stock. However, there are several large bands of thoroughbreds, and fine breeding animals are by no means rare.

In the absence of an abundance of corn, or a climate suitable for producing it extensively, a few farmers have been experimenting with peas as a substitute upon which to fatten hogs. Pork, by the way, is a rare commodity in all the northern country and commands very high prices. Mr. A. F. Nichols, of Gallatin county, sells from 12,000 to 20,000 pounds of pork annually, which has been produced on peas, and Bass Brothers, of Bitter Root Valley, market of bacon alone as high as 21,000 pounds per year. These gentlemen are of the opinion that peas make the best food for hogs, and they can produce more pork from an acre of peas than can be made from the same area in corn in Illinois. Pork in different forms sells at from 12 to 20 cents per pound in Montana towns, and hundreds of tons are still imported from distant states to supply the demand. Hogs for breeding purposes are very scarce at from \$12 to \$20 each.

Any of the branches of stock-raising thus briefly outlined present opportunities without end for speedy money-making in Montana. The requisites are in a nutshell, some capital at least, a careful study of the business, and the same attention devoted that would be bestowed upon any legitimate business venture of equal magnitude. So long as the world pays its greatest tribute to food—to bread and beef—the demand must ever keep its proportion beyond the supply, and these broad pastures and thousand nestling valleys are ready and waiting to respond to the magic touch of labor and capital judiciously applied.

MINES AND MINING.

Although I have made this interest take the third place in my brief treatise on Montana, it is the pith and marrow of the subject. Here the pen has its greatest temptation to run riot, and if ever enthusiasm needs suppressing, it is while considering the present and future of this fascinating industry in Montana. Next to California in her total production of gold, Montana is generally conceded one of the richest in deposits of precious and base metals of all our mineral regions. Her mountain ranges, extending alternately with her valleys from the copper fields of the Musselshell on the east to the extreme western border of the Territory, 350 miles, and from the Bear Paw range, near the British line at the north, to the Idaho line on the south, 300 miles, exhibit one vast succession of croppings of either gold, silver, copper, iron, lead or coal, and several counties contain extensive and valuable deposits of all of these. Alder Gulch alone—from whose sluice-boxes some \$40,000,000 in dust and nuggets have been poured—has given the Territory a reputation which crosses the seas. Thus the mineral wealth of Montana is not segregated into one vast fissure like the Comstock, but distributed by a generous hand into hundreds of veins and within the reach of all who possess the patience and industry to delve for it.

The yield of gold thus far, according to the best authorities, has been \$147,000,000; of silver, \$6,000,000—a total yield exceeding that of Colorado, Utah and Idaho combined. Over 1,000 gulch and placer claims have been discovered, and many are still being worked. While much of this gold yield has come from the fabulously rich gulches, the grand fountain heads of metallic wealth lie in the quartz veins, of which some 20,000 have been recorded—and some prominent mountain ranges have hardly been the scene of a single bivouac of the prospector. This interest, merely in its inception, it is believed will soon place Montana second in the list of bullion producers. The rapidity with which the quartz mining interest is increasing in importance can best be judged from the fact that in 1875 the yield from this class of mines in Montana was, in round numbers, \$2,225,000; in 1876, \$3,000,000; in 1877, \$3,200,000; and in 1878, \$4,200,000. The facilities for working mines and reducing ores were so largely increased in the fall months of the past year that we are justified in placing the yield from quartz mines alone in 1879 at \$6,000,000. The total yield of the quartz and placer mines of Montana for 1878 is stated as follows:

Gold dust and bullion shipped by express.....	\$2,000,000
Silver bullion shipped by express.....	1,750,000
Gold dust taken out by individuals.....	100,000
Silver handled in lead bullion and matte.....	540,000
Ores taken out and remaining in hands of miners	750,000
<hr/>	
	\$5,140,000

About sixty arastras, stamp-mills, smelting and concentrating works are now in operation in the Territory. Three thousand five hundred tons of base bullion and ore were shipped via the Utah & Northern Railroad to the Omaha and other smelting works the past summer. Concerning Montana silver mines, Hon. R. W. Raymond, United States Commissioner of Mining Statistics, reports that "It is noteworthy that most of the silver ores in Montana occur in fissure veins and not in limestone deposits. This circumstance encourages the

hope that the silver mining industry of Montana, if it does not bring forth such an immediately brilliant and voluminous product as certain districts in Utah and Nevada have done, will at all events be more enduring and permanent." Take this source of wealth, which is soon to prove Montana a peer of any of her sisters, and in the table following note the steady and rapid tribute from nothing in 1872 to millions in 1878. The estimates are from data furnished by the Helena banks, express offices and the United States assay office at that place, and are believed to be rather under than over the true amount:

In 1873	Montana's silver production was.....	\$201,300
In 1874	" " " "	490,766
In 1875	" " " "	660,000
In 1876	" " " "	1,132,976
In 1877	" " " "	1,250,000
In 1878	" " " "	2,400,000

Of course the production of gold during these years was vastly greater than that of silver, but the annual increase in the yield of gold has not been so large. It is a fact admitted by such authorities as Raymond and the many mining experts who have examined the Montana silver lodes, that none others in the entire Rocky Mountain region give better promise of continuing and rapidly increasing their output than those of Butte, Philipsburg, Glendale and Jefferson, Montana. The \$54,000 gold brick of the Penobscot mine near Helena, a product of thirty days last season, startled readers all over the Union, and yet in its total production of about \$200,000 in 1878, this property would in Montana rank as third rate. Several of the silver mines at the camps just named show a production of from \$300,000 to \$500,000 each for the same period. Following is a statement of the Director of the United States Mint showing the value of gold and silver bars manufactured from bullion in 1878 at the different government assay offices of the country. The Helena office, it seems, treats more bullion than the four other like institutions combined:

Helena, Montana.....	\$716,738.41
Denver, Colorado.....	362,807.65
Boise, Idaho.....	62,588.54
Charlotte, North Carolina.....	25,855.84
New Orleans.....	18,554.17

The Butte Silver Mines.—Foremost in the list of Montana's quartz mining camps is Butte, situated in Deer Lodge county, about 250 miles north of the present Utah & Northern Railroad terminus. Over 3,000 quartz mines have been located, sixteen quartz mills, roasters and arastras have been built and are turning out over \$1,000,000 worth of silver bars yearly, and a handsome, solidly-built city of 4,000 inhabitants has appeared where three years ago was a collection of a dozen log huts, inhabited by a few miners who had not commenced to dream of the present prosperity. Among the grand network of large and thoroughly defined silver veins which have been profitably worked during the past two years I may mention the Alice, Lexington, Original, Gagnon, La Plata, Parrott, Rainbow, Burlington, North Star, Acquisition, and Nettie.

The Alice and adjoining claims on the Rainbow Lode, owned by the merchant princes of Salt Lake City, the Walker Brothers, form probably the best developed mine in Montana. The main shaft, over 300 feet deep, and other extensive workings, demonstrate a lode of immense width, varying from 35 to 60 feet.

Over 7,000 tons of ore have been raised from this giant treasure box, yielding all the way from \$40 to \$200 to the ton and worked in the extensive and well-ordered mill which stands a few rods down the hillside. About 250 bars of silver bullion, each bar weighing 2,000 ounces, have been shipped to Salt Lake, and the total product of the Alice of fifteen tons of pure silver in the last two years has attracted attention to Montana's mineral wealth as no other advertisement could. The average shipments are now about \$45,000 in bars per month. This great vein has been traced for three miles over the mountains and across the gulches, and near the Alice mill the croppings rise some ten feet above the surface—an enormous dyke of Nature's masonry whose proportions and wealth in silver it would seem must penetrate the once-riven earth to unfathomable depths. Over \$400,000 have been invested in the purchase and development of this mine, in the erection of the 20-stamp mill, steam hoisting works and pumps, and in the purchase of the vast quantities of salt, quicksilver and iron used in treating the ores. The mill and furnaces are greedy monsters, feeding not only upon twenty-five tons of ore daily, but devouring also every twelve months 1,000 tons of salt worth \$80,000 and 40,000 pounds of quicksilver worth \$20,000, besides great quantities of fuel. The pay-roll here amounts to \$15,000 monthly, 80 men being employed in mine and mill.

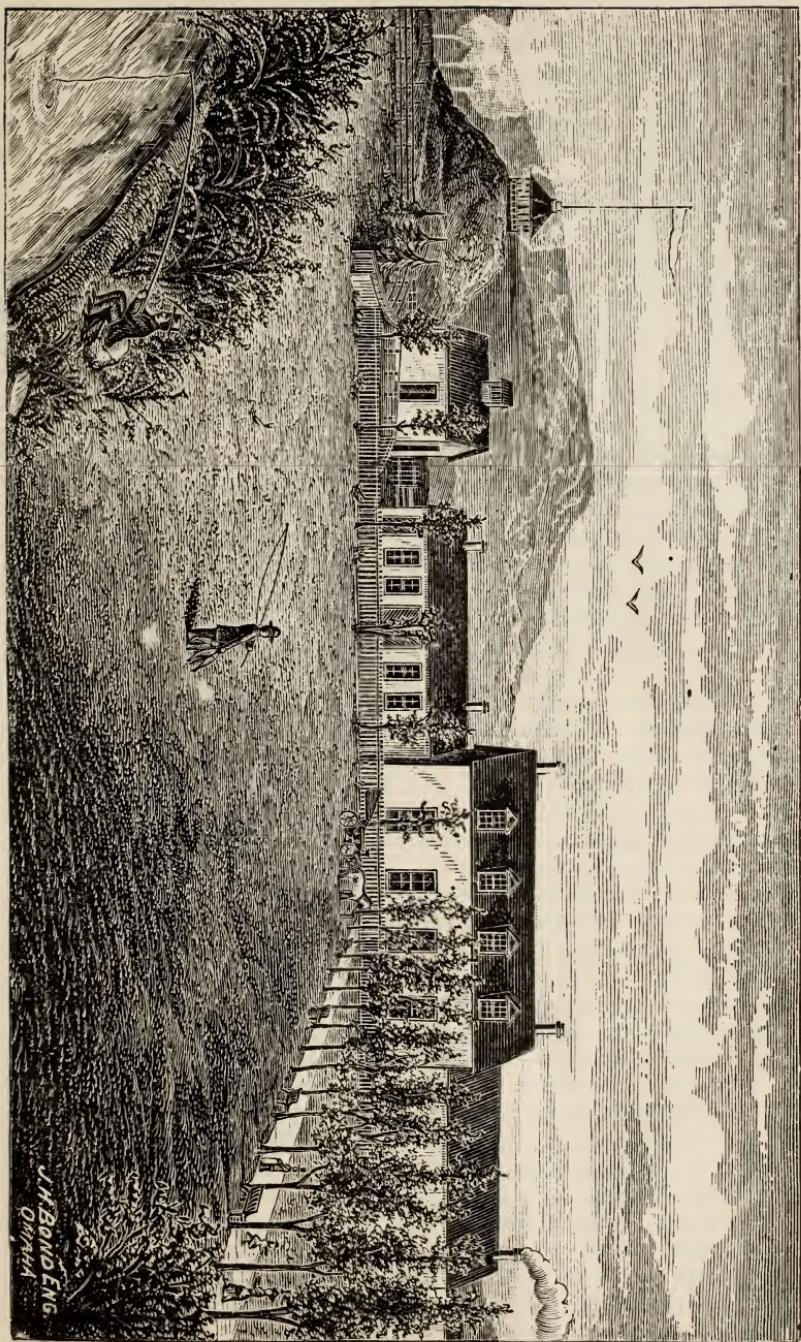
A wonderfully valuable cluster of claims is that upon and surrounding the Lexington mine, all owned by A. J. Davis, Esq. There are six shafts sunk upon the Lexington varying from 50 to 150 feet deep, and at the depth of 100 feet I walked upon the main vein for a distance of one-fourth of a mile, and occasionally turned to the right or left and explored its many rich spurs or branches. Mineral from all of these shafts without assorting has averaged 60 ounces in silver to the ton, and is nearly all easily reduced by the stamp mill and roasting process. I frequently traced a solid vein of ore 18 feet wide, every ton of which was worth from \$50 to \$200. Stopping at one point the foreman called my attention to a bright streak of metal which assays \$20,000 in silver and \$18,000 in gold per ton, and at another halt he pointed out a two-foot vein of sulphurets yielding \$300 in silver and \$100 in gold per ton. The ore is not assorted, every ton of the 6,000 thus far raised from these Aladdian, rock-bound avenues being hauled to the mill and paying well for crushing. The underground timbering betrays a skillful planning and arrangement; any of the heavy sills, supports or joists being so systematically fashioned that they will exactly fit in any similar position elsewhere in the mine. The total cost of mining, hauling and turning these ores into silver bars is only \$12 per ton, so that a nice little margin is left on the vast quantity of ore which yields from \$40 to \$250 to the ton. The Lexington, with only a 10-stamp mill reducing its ores, has paid for itself, for ten other mines (aggregating 18,000 feet of paying veins), for a complete 10-stamp mill and a well-built iron foundry, and is "on velvet," with a strong bank account ahead. Its output was about \$250,000 in 1878, and its mill is to be doubled in capacity during 1879, so that a much larger yield may be credited hereafter. No visitor should ever leave Butte without seeing this great mine, for be he novice or expert he will leave acknowledging that he has strolled over, under and around a fortune whose gigantic dimensions can be calculated upon, even though it is underground. Divide your estimates by half, "on account of the lightness of the atmosphere," and you can demonstrate beyond the shadow of a doubt that there are \$2,000,000 in sight in the different claims on the Lexington.

It would be a pleasant duty to write of the Parrott, Modoc, Hattie Harvie, and other mines whose wide ore veins are so rich in copper that their product has been shipped to Baltimore for separation, and to note dozens of silver lodes which now promise as well as did those above described at the same stage of development, but with a brief reference to the great Gagnon mine,—which at Butte is called the bonanza claim of Montana,—I must turn to other districts. There are three claims on this vein which have already attracted considerable attention on account of the wonderful average richness of their ores, namely: the Original, National, and Gagnon. Ten shafts penetrate the lode to depths varying from 50 to 200 feet, and disclosing a vein ranging from 5 to 20 feet in width, from which thousands of tons of ore have been taken, yielding from 50 ounces to 500 ounces in silver to the ton. In my rambles around the drifts and levels I found some large masses of ore spangled all over with grains of the unmistakably pure silver. The lower grade ores are easily reduced at the Dexter mill near Butte, while the richer ones are shipped to the Colorado and Omaha smelting works. The Original, the first mine discovered in the camp, is owned by W. A. Clark, Esq., a banker of Butte, who also operates the Dexter mill, and ships high grade ores to distant smelting works. Mr. Clark last year shipped one lot of 15 car loads of ore from the Original to the Colorado smelting works, which averaged 190 ounces of silver to the ton, and yielded enough copper to almost pay the cost of transportation. This lot was taken from a two-foot vein without assorting, and contained specimens which assayed high up in the thousands. The mine paid a net profit of \$30,000 in 1878. One lot of 175 tons of ore from the Gagnon, also shipped to Colorado, yielded \$70,000 in silver and from 10 to 20 per cent copper. Following is a statement of the ore and bullion shipments of Butte for 1878:

Value of silver bullion	\$899,000
Gold dust	85,000
Ore shipped via Utah & Northern R. R.	1,920 tons }
Ore shipped via Missouri River	135 tons } 190,000
Total value of Butte shipments	\$1,174,000

A Rich Gold Mine and Valuable Cabinet.—In the Cable District, also in Deer Lodge county, is the Atlantic Cable gold mine, which has yielded its thousands in past years, and offers the richest specimens, I believe, that have ever been taken from a quartz mine in America. From one "pocket" on this lode, Mr. Cameron, one of the owners, took out 100 tons of quartz, which yielded, it is said, \$20,000. From the same ore about two tons treated by hand (crushed in an ordinary druggist's mortar) yielded \$8,000. Besides this, Mr. Cameron has a collection of specimens weighing altogether about 200 pounds, and presenting large masses of gold. One piece, almost solid gold, is worth \$375; another, about the size of a small hen's egg, has projecting from the quartz a mass of pure gold in the shape of a finger, containing the precious metal to the value of \$75. There are numerous pieces in the collection of solid gold, weighing at least an ounce each. This little cabinet contains nearly \$7,000 in gold.

The Philipsburg Silver District is another of the promising regions of Deer Lodge county. Here are the claims of the Hope, Algonquin, and Northwestern Mining Companies, each of which are adding a not very small mite in the way of silver bars to the world's riches daily. The Trout, Algonquin, Comanche,



DEER LODGE MINERAL SPRINGS, DEER LODGE VALLEY, MONTANA.
REACHED VIA THE UNION PACIFIC AND UTAH & NORTHERN RAILROADS.

Hope and Apache are leading mines, whose total product the past year has been some \$300,000. The Hope and Northwestern mills are among the finest in the west, and promise to continue and increase their output for many years.

Silver lodes also abound in Moose Creek District, and valuable gold-bearing lodes in Highland, Snowshoe, McClellan, and Bear gulches—in fact Deer Lodge county is literally seamed with gold and silver mines, and adds to these some immense deposits of coal, iron, lead and copper.

The Mines About Helena.—Almost every bluff and ravine for miles around Helena is auriferous. The "Penobscot," 25 miles northwest of Helena, lying partially in Deer Lodge and partially in this county, is one of the most noted mines in the Territory. Many readers already know how the patient, hard-working and finally fortunate Vestel here made his "stake" of \$500,000 in less than a year—the mine yielding over \$100,000 in the first 50 feet in a few months, and Mr. Vestel then selling out for \$400,000. The deepest point reached in this now famous lode is about 150 feet, and the character of the vein matter thus far quite equals the most sanguine hopes of its owners. With its present appliances for the treatment of ores it will yield not less than \$500,000 of the precious metal during 1879, and with the increase of the number of stamps, as now proposed by the new company, its yield will be over a million. The "Belmont," the next best equipped mine in the same locality, it is estimated will yield about \$150,000—even if there is no improvement in the character of its output during the year. The "Whippoorwill" has recently discovered unexpected treasure, its owners claiming for it an equal degree of richness with the "Penobscot." The "Blue Bird," with very little development, but promising exceedingly well, has milled ore worth \$40 per ton. Within five miles of Helena, the "Black Alder," a gold lode, has just been opened, which makes a remarkably large display of ore, which has netted not less than \$25 per ton by the ordinary mill process. This is in the vicinity of the famous "Whitelach Union," which has yielded about \$3,500,000 in gold. About the same distance from Helena, in a northerly direction, is the "Lexington" mine, a veritable curiosity in the mineral world. It has produced nearly every conceivable kind of silver, from the native metal down through all its various combinations. Out of less than 200 tons of the ore-product, about \$30,000 were realized, according to statistics published in June, 1877. A shipment of six tons yielded \$5,887.79, and one ton sold here carried nearly \$6,000. Development is now going on under the auspices of an energetic company. The Ten Mile and Red Mountain districts, within two hours' drive of Helena, contain silver-bearing lodes in great numbers, a few of which develop ores that pay well for shipment to foreign reduction works, but the great majority of which lie idle awaiting capital and cheaper means of reduction than are available at present. In these districts are all the various ores essential to run complete reduction works, containing free milling, galena, and the various iron and copper and other ores required for fluxing.

Many other deserving districts and mines could be mentioned, but lack of space forbids. Last Chance and its tributary gulches, in which Helena is built, have already yielded some \$15,000,000 in gold, almost without the application of capital, and mining still progresses among the lower streets, as well as in every nook and corner of the romantic gulches and mountains closely surrounding. These gulches have been usually productive the past year, yielding not far

from \$500,000. It is fair to expect a much larger return for next year, when the flumes now partially completed reach and open the ground now known to contain an abundance of the precious dust.

Naturally tributary to Helena are the Jefferson county mines, which in years past have yielded some \$6,000,000, and are credited with a yield of \$200,000 in 1878. Its mines carry both gold and silver, and are mainly found near Jefferson, Radersburg and Boulder. Near Jefferson, twenty-four miles south of Helena, we were shown the returns from eight partially developed silver lodes, whose ores were yielding from 80 to 225 ounces of silver to the ton, and fifty per cent lead. Copper is also found in some of these ores in considerable quantity. Among the principal mines are the "Argenta," 325 feet deep, which has yielded \$100,000; the "Comet," which has shipped 2,000 tons of ore to eastern reduction works—and whose owners think they can ship about a good train load daily upon the advent of the Utah & Northern; the "Alta," which offers ore carrying as high as \$600 worth of silver to the ton: and the famous "Itumley," which has yielded its hundreds of thousands of dollars' worth of rich silver ores. Some twenty-five other mines within a radius of ten miles of Jefferson show very excellent "prospects," and the district seems to be a vast net-work of argentiferous veins. The Montana Company's concentrating and reduction works, which have cost \$150,000, are located near Jefferson. Their production during 1878 was \$75,000, and are now yielding at the rate of \$375 per day. With improvements, now being added, these works are expected to easily produce \$200,000 per annum. The Boulder District joins the Jefferson District, and many valuable silver, copper and gold lodes are found there.

Among the cluster of mines near Radersburg are promising silver and copper veins, the "A. M. Holter" and the "Copper King" being worthy of special mention. The former carries a fine body of ore, assaying from \$40 away up to \$8,000 in silver per ton, while the latter is rich in sulphurets of copper, yielding from 40 to 60 per cent of pure copper. The ores of the principal leads of this district contain iron after a certain depth is reached, and for their successful reduction more elaborate works will have to be constructed. These will be added in the immediate future, and the mines will again add largely to the gross gold product of the Territory. The gulch mines near Radersburg are very extensive, and have paid from \$10 to \$15 per day to the man the past season. Several mills are also crushing quartz from gold mines in this vicinity, and from all appearances are reaping a golden harvest. Clancy, eighteen miles from Helena, has been a lively silver mining camp in the past, and the future will doubtless see it more so. Jefferson will surely be one of the great mining counties of the Territory.

Southern Montana Mines.—The mines of Beaver Head and Madison counties give promise of a future immediately brilliant, because of their nearness to the Utah & Northern Railroad, which is so rapidly approaching from the south. The advantage they will now possess because of their accessibility, and the ease and economy with which machinery and supplies can be transported to them, or ores carried out, are items which will enter largely into their future history. Both counties abound in rich mineral districts, the quartz mines of Beaver Head county, however, just at present attracting by far the larger share of attention. The first gold mining operations of note in Montana occurred in the fall of 1862, at Bannack, now the county seat of this county, and since then

some \$4,000,000 worth of placer gold have been produced. There are seven organized mining districts within the bounds of Beaver Head. In these are some of the very best silver mines in the Territory, and a number which have yielded small quantities of fabulously rich gold ores. Deposits of iron, copper and coal are also reported in various sections.

The banner district of the county, so far as developed, is Bryant, in the northern portion, where such mines as the "Atlantis," "True Fissure," and "Cleve" have been surprising even their owners with their wonderful rock-bound offerings. Nearly all of the developed lodes lie high among rugged mountains, and belong to the Hecla Consolidated Mining Company, whose great smelting works enliven the pretty village of Glendale, ten miles below. Most of the veins carry oxidized lead ores, very rich in silver, and having a formation peculiarly their own. Plainly traceable by croppings on the surface for 3,000 feet, they are found to lie in a system of caves—these caves being connected by narrow ore bodies which are never lost sight of. Continuous streaks of ore from eight to twelve feet wide and 500 feet in length have been followed and found to average over 100 ounces of silver to the ton; in fact, every ton of the many thousands thus far worked has averaged 116 ounces of silver, 15 per cent copper, and quite a proportion of lead. The deposits are seemingly inexhaustible. At the mines there are three sets of splendid steam-hoisting works, and several of the most approved steam drills.

The smelting works, among the finest in the Rocky Mountains, consist of two reverberatory furnaces, two blast furnaces, three refining furnaces, and such auxiliaries as a ten-stamp mill, assay office, ore house, etc., the buildings covering five acres of ground, and constituting quite a village in themselves. An additional blast furnace will be erected. These improvements have cost about \$400,000. The production for 1878 was \$400,000 worth of silver, lead and copper. This was nearly all from the "Atlantis" mine. The year previous the product was \$200,000, and in 1876, when only the nucleus of the present vast establishment was on the ground, \$100,000. Much of the product is shipped out over the Utah & Northern Railroad in the shape of base bullion and copper matte to other smelting works. The entire shipments for 1878 were about 1,000 tons of silver and lead bullion and copper matte. The company employs directly and indirectly 300 men, the pay-roll and expense account footing up \$20,000 per month. Nearly 2,000 bushels of charcoal, which is manufactured near by, is consumed in the furnaces every twenty-four hours.

The company has commenced the construction of what will probably be the pioneer steam railway of Montana. This will extend from mills to mines, a distance of ten miles, to facilitate the transportation of ores and supplies. It will be 30-inch gauge up to the last two miles among the mines, where the stupendous grade of 700 feet to the mile will necessitate the traction rail system. Grading along the romantic slopes is actively progressing, while the manufacture of engines, cars and rails, already under way in the east, indicates what Mr. Armstrong promises—a high line excursion over a Montana railroad by the coming midsummer. Considering that the company is now paying \$300 per day for ore-hauling, and the ores seem inexhaustible in quantity, this appears a wise investment. A flume twelve miles long, to convey wood from the heavy forests in adjacent mountains, is also in progress. It is reliably stated that the Hecla company realized a net profit of \$100,000 on its operations in 1878, and

this is only a fair illustration of what capital, judiciously invested and carefully manipulated, will accomplish in many of the mining districts of Montana.

Six miles north of Bryant is Vipond district, where there are several well defined silver lodes. From these mines several hundred tons of ore recently yielded an average of \$200 to the ton. Three arastras, running on ore from different lodes in this district, are proving them worthy the attention of capital. Some 25 miles north of Bannack is Elkhorn silver district, in which the "Storm" is a local bonanza, carrying a 10-foot vein of ore, which is said to average \$50 to the ton. The operations of a six-stamp mill for two months here resulted in a yield of \$7,000. Three miles east of Bannack is Blue Wing District, and 15 miles northeast, Argenta District, both showing some exceptionally fine silver ores. In the latter, a blast furnace has, during the past two seasons, turned out \$100,000 worth of bullion. The gold quartz mines in the vicinity of Bannack have been operated continuously for the past fifteen years. The Dakota mine is not only a fine property, but possesses historical interest, having been the first quartz lode discovered in Montana. The Wapello, St. Paul, and Excelsior are other prominent mines in the vicinity of Bannack. Several stamp mills and an arastras are in successful operation on these mines. Horse Prairie and Medicine Lodge districts, fifteen miles west from Bannack, are yielding considerable quantities of gulch gold, and exhibit very good "prospects" of copper and coal.

The total yield of the mines in 1878 is as follows: Gold shipped per express, \$100,000; refined silver bullion, \$50,000; base bullion and copper matte, \$450,000; total value, \$600,000.

Mining is the great industry of Madison county. The principal minerals are gold, silver, lead, copper, iron and coal; precious stones are quite abundant, and among the most valuable are rubies, garnets and agates. There are ledges of white marble, also of excellent building rock and sandstone, the latter used in the manufacture of grindstones. Madison county has quartz lodes in nearly every section of its large territory, almost every bluff and mountain range being auriferous. There have been five thousand quartz mines recorded in the county. Gold is the chief article of export. All the world knows of Alder Gulch, whose unexampled richness first really started Montana on an era of prosperity that will know no end. This gulch lies near the center of the county. It has yielded \$35,000,000 or more, and for sixteen miles it is yet strung with mining enterprises of more or less magnitude. Its yield in 1878 approximated very closely to \$500,000. One claim yielded \$60,000 in six months the past season.

During the past year the Broadway mine, at Silver Star, in the northwestern corner of the county, yielded \$100,000 in gold, and quite a cluster of mines in that vicinity are being successfully worked. The Broadway has a vein from 12 to 28 feet wide, containing free milling red hematite ore, similar to that so common in the Black Hills. There are 40 stamps and probably a dozen arastras running in Silver Star District. The yield of the district for the past twelve months is estimated at \$125,000. Thirty miles northeast of Virginia is Red Bluff District, in which a ten-stamp mill and an arastras are cleaning up small fortunes annually without much ado.

Gold mines are being worked at a nice profit in Meadow Creek, Wisconsin Creek, Sheridan, Iron Rod, Hot Springs, Alder, Summit and other districts within forty miles of Virginia City. The old-fashioned arastras, the connecting link

between the hand mortar and the stamp mill, is found grinding away on every hand, but is destined to be superseded by the mill at no distant day, and the general gold product of Madison county will then be augmented into millions. The total yield of the mines in the past year is placed at \$650,000.

Then Madison has excellent silver mines, which, though not extensively worked at present, will make a fine showing ere long. The Potosi silver district, which lies 40 miles north of Virginia City, in the rugged Tobacco Root range, offers the Bullion lode, with a six-inch crevice, showing specimens of silver glance and sulphurets assaying \$30,000 to the ton; the Palmetto, Crown Point, Iria, and twenty other mines, showing veins from twelve inches to two feet wide, with ore averaging from 100 to 500 ounces to the ton; but Potosi District, with only its narrow trails, not dreaming of the railway age, still awaits the wagon-road era, an era which it is hoped will soon dawn.

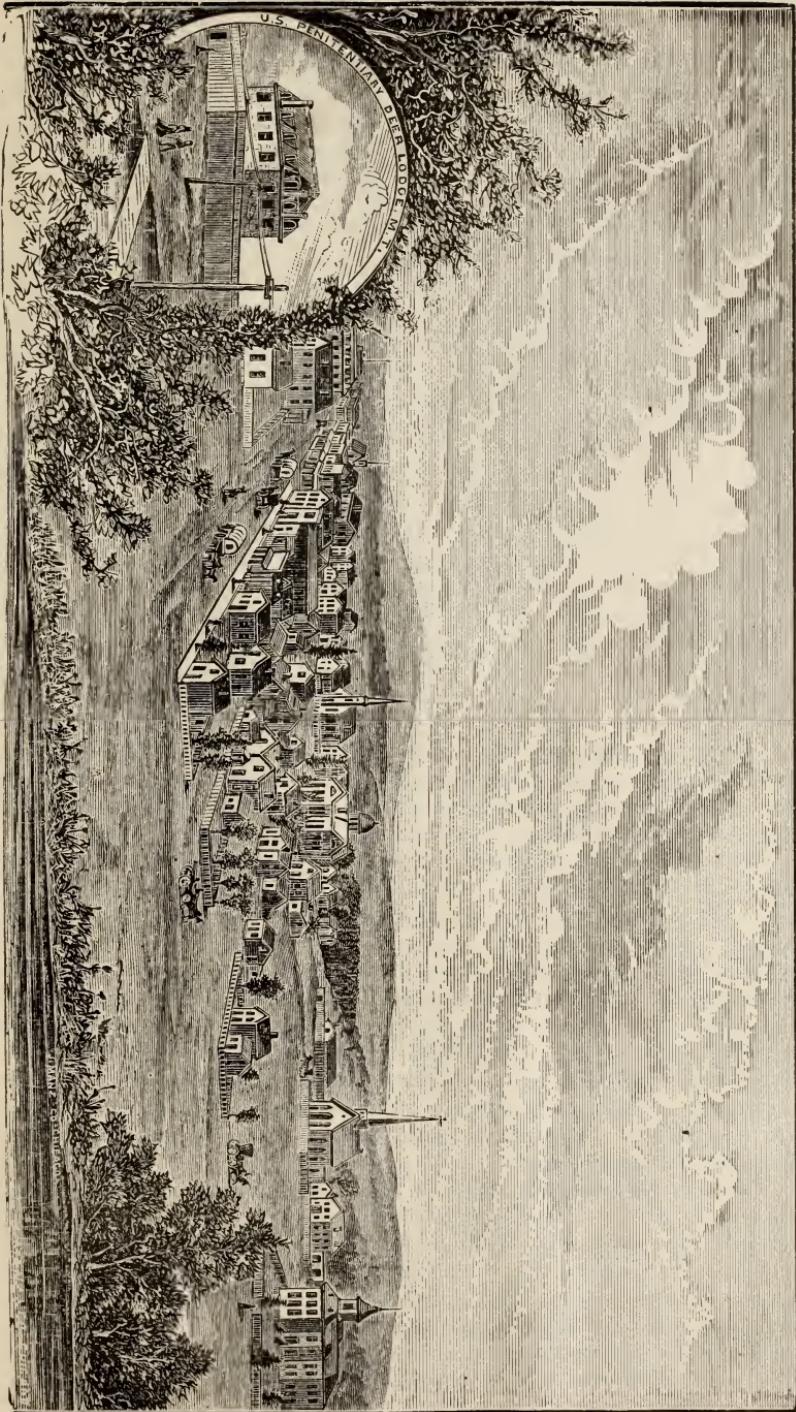
Copper veins yielding from 25 to 40 per cent copper, zinc ores carrying 30 per cent zinc, coal which burns nicely in stove or forge, and large deposits of iron, are among other minerals of Madison county awaiting the appearance of capital for their development.

The Prospects Elsewhere.—In Missoula county, in the northwest corner of the Territory, a grand mineral wealth is also indicated by old and recent developments. In the eastern part of the county is the lately organized Wallace mining district, in which quartz ledges rich in gold, silver and copper are plainly traced to a great length by enormous croppings on the surface. Some 50 mines have been located, and moneyed men are becoming interested. In the western portion of the county, on Nine Mile Creek, silver mines are being worked and are producing ore assaying all the way from 40 to 1,800 ounces of silver to the ton. Near by are gulch mines which have yielded over \$1,000,000, and are still responding quite liberally to the efforts of Chinamen. In the gulch mines of Cedar Creek, Quartz Creek and Sunrise districts about 250 men are quietly plying shovel and sluice fork with satisfactory results. It is a pretty well established fact that different other regions of the county contain gold and silver quartz deposits, but the isolation and long distance from railroad communication have operated not only against prospecting, but also against development when mines were found. There is an excellent vein of soft coal about five miles from Missoula City.

In Gallatin county there are mines not to be overlooked. Bear Gulch quartz district, and Emigrant Gulch placer mines, in the central part of the county, have yielded fairly the past season, with fine prospects for the future. The Clark's Fork silver mines, just over the Wyoming line, 75 miles southeast of Bozeman, have yielded good ores, and a smelter is now on the grounds to further utilize them. Iron deposits are found 15 miles south of Bozeman, and also 40 miles east. The latter are said to be magnetic ores of a very high grade and in immense quantity. A large deposit of lignite is found within five miles of Bozeman, another fifteen miles distant. The product of each is burned in Bozeman, and is called very fair fuel. On the Crow Agency, 100 miles east of Bozeman, a very superior bed of lignite is also found.

Chouteau county contains the Bear Paw mines about which so much excitement prevailed early in 1878. Gulch mining operations have thus far proved rather unsatisfactory, but residents of Fort Benton claim that developments now progressing there will prove them quite extensive and rich,—excellent silver

DEER LODGE CITY, MONTANA.
REACHED VIA THE UNION PACIFIC AND UTAH & NORTHERN RAILROADS.



quartz has been discovered there. Choteau contains several deposits of good soft coal, one of which yields to the extent of about 7,000 bushels annually.

In passing over Meagher county from Helena, I entered the Belt mountains by that noted golden avenue, "Confederate Gulch." For ten miles there is a constant succession of old gulch and bar diggings, where, in 1865, the occupants were numbered by thousands, and where, even yet, a determined rear guard meets encouragement in the sluice-box sufficient to warrant such lingering. The gulch at Diamond City, and above, was long ago stripped of earth and gravel to bed-rock, and the mountain on the left is in a fair way to make the same inevitable journey down through the sluice-box. A few steps above Diamond City is Montana Bar, from which \$1,000 in gold were taken from a single pan of dirt in 1868. The bar was undoubtedly the richest ever discovered in America, for its size. It is only half a mile long, and from 200 to 300 feet wide. Each 100 feet of this half mile panned out more than \$100,000, and the novel spectacle of four-horse wagon loads of gold leaving camp with a battalion of armed men as a guard, was witnessed here more than once. Meagher county is credited with a total yield of \$10,000,000 in gold. This is nearly all from the placers we have passed. There are numerous gold, silver, lead and copper ledges in Meagher awaiting the capital that the railroad era is bound to bring, and the coal deposits are probably the most extensive in the Territory.

As has already been noted, coal, iron and copper abound in nearly every county in the Territory. Copper is found in immense deposits, assaying from 20 to 50 per cent pure. Concerning Montana copper ores, Raymond, in his report of 1877, says: "The almost uniform experience of working the Montana copper veins has been to demonstrate that the veins improve in width and richness the deeper the shafts are sunk. At a depth of from 80 to 100 feet several of them now show ore that will average 50 per cent copper, though near the surface the same openings yielded ore carrying but 25 to 33 per cent. The lodes of copper are abundant, and the veins from 4 to 100 feet in width."

The smelting works at Helena had occasion not long since to advertise for iron ore, to be used for fluxing with silver ores, and were immediately deluged with samples *from forty-eight different deposits or mines* running in value all the way from 25 to 80 per cent pure iron, and representing every conceivable variety of ore. An iron mountain in Deer Lodge county, three or four times larger than the celebrated iron mountain in Missouri, averages 30 per cent of that metal. Coal beds lie within three miles. An iron furnace is to be built there the coming season. About 60,000 square miles of Montana's area is underlaid with coal. Lead ores averaging 75 per cent and a proportion of silver are frequent. These various interests present a field not only worthy the attention of capital, but of labor also — for in this land muscle commands a premium, if anywhere in the wide world.

The 400 miles—and often more—of wagon freighting, to and from Montana, has been the most discouraging item. No other territory has been so isolated. While mining operations could often be carried on without much dependence upon outside auxiliaries, the far more important quartz-mining interest has demanded heavy machinery, costly and bulky crushers and smelters, adjuncts to successful operations, which had to suffer these aggravating delays and enormous expenses incident to the long overland trip, or the almost equally unsatisfactory Missouri river jaunt, which was of avail only three or four months of a year. Thus far

Montana mines have also been almost entirely developed by home capital, and the instances are many where money has been borrowed by the miners for the purposes of development, at an interest of from *two to four per cent per month!* To separate these precious metals successfully; to crush tons of stubborn and solid rock beneath the ponderous stamps of the quartz mill for ounces of dust; to melt large masses of ore in the fiery furnace of the smelting works for silver "buttons" or "bricks," and to receive pay for handling the worthless portions, taxes the skill, ingenuity and industry of these determined citizens of Montana. But where mines are so rich that they justify the miner in putting ores in sacks, and hauling it 400 miles to the railroad, and then shipping it to the seaboard or even across the ocean, as has been done, for treatment, they deserve railways — those grand agencies for the development of all countries. The "railway era" of Montana will indeed be a happy one; for it will unloose the fetters of hundreds of rich mines and convey untold millions of wealth to the outside world.

PICTURESQUE MONTANA.

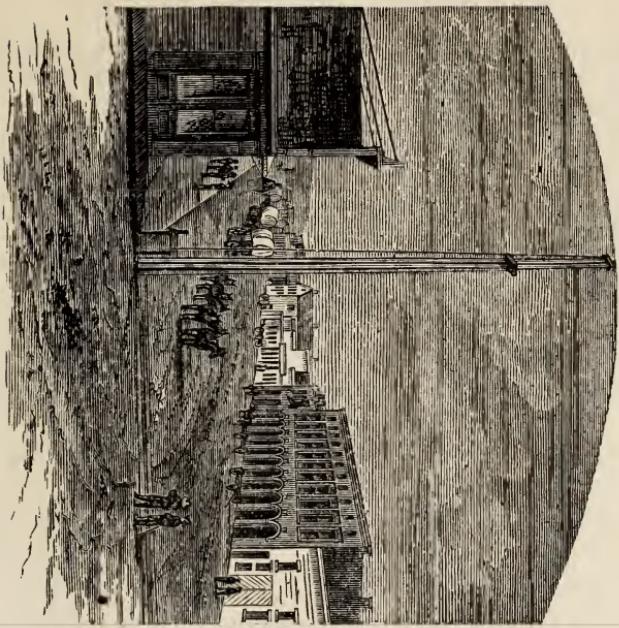
Entering Montana from the south, via the Union Pacific and Utah & Northern Railroads, the tourist hardly crosses the line ere objects of interest to the purely æsthetic taste plead for attention right and left. Then he may wander all over this marvelously beautiful domain, from the bad land region of the lower Missouri and Yellowstone at the extreme east, to the grandly rugged and often iridescent summits of the Bitter Root range at the western boundary, and, at the close, confess in his bewilderment that nature charmed so irresistibly at different steps, it would be difficult which spot to favor in a second ramble. When, from the slopes of Madison county's "Old Baldy," I looked down upon Ruby Valley, with the golden light of the morning sun creeping down the purple heights of Ruby range, and gradually chasing away the deepest shadows, I mentally ejaculated there could be no such other enrapturing picture in all nature. But a few weeks later I feasted my eyes on Bitter Root Valley, far to the northwest, with its wildly romantic walls lifting snowy summits six thousand feet above my head, its river a glorious mirror of the fields, forests and orchards fringing it, and its golden harvests and pine-embowered homes — *sunset and all* — and, mutable mortal that I was, straightway proved treacherous to fair little Ruby. As for the distinctively grand and awe-inspiring, when still a few weeks later I peered into that five-mile throat of granite through which the Missouri seeks egress from mountainland, or stood enraptured among the clouds of spray at the feet of the great falls of the same noble stream, I could easily forget both Bitter Root and Ruby.

Then, when I add that Montana abounds in hot mineral springs, in many of which I bathed in turn, at each successive ablation vowing that I had never enjoyed such an exhilarating douche before, you can imagine that for the invalid there is here much room — though little necessity — for choice. Every county, almost every valley, of the great Territory presents these healing waters, of virtues unexcelled, as variable in kind as the trees in her forests, and in quantity not equaled anywhere outside the vales of "Wonderland." I found them occasionally utilized, and in a limited way fulfilling the beneficent behests designed, but more often their waters were found wastefully mingling with the pure ice-cold current of neighboring streams, and forever losing their identity during the long journey to the sea.

Near Lovell's, in Beaver Head Valley, and in full view of the stage road, is Beaver Head Rock. It is this quaint landmark which gives river, valley and county their name; and as there is a very good likeness of it in these pages, readers will unite in saying that the title is appropriately bestowed. The rock rises 300 feet above the river, and is so near the perpendicular that a plummet suspended from its summit would drop into the edge of the deep eddy which washes its southern base. A short walk up the cañon, bursting from the cliffs by the roadside, is a cluster of warm springs. They throw off a strong stream of water, and, dropping over a ledge some twenty-five feet above the road, form the pretty little Twin Falls, which Montana-bound people admire so much.

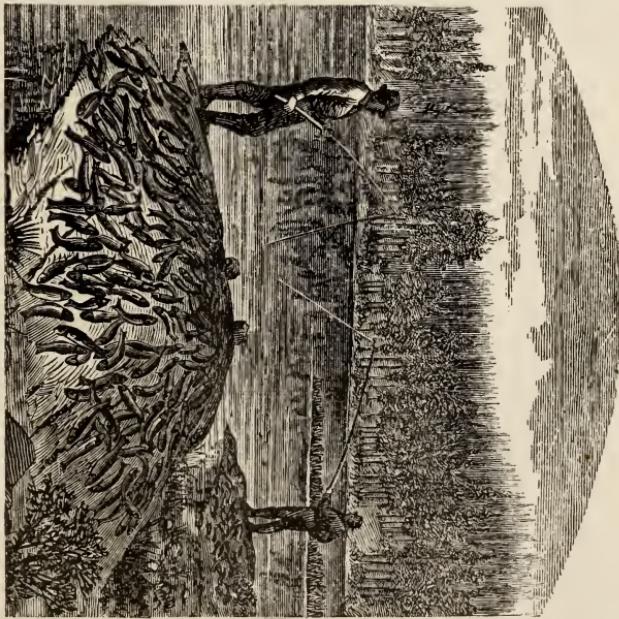
Twenty miles west of Lovell's, near Argenta, is one of the most interesting caves in the West. Its principal entrance is at the base of an abrupt, heavily timbered mountain, a pretty park-like opening among some towering pines marking the spot. A good carriage-drive leads direct to its mouth. Passing through a hall-way some twenty feet wide and fifty feet long, cut in solid limestone, the visitor finds himself on a rapid down-grade, leading toward the heart of the mountain, at an angle of 45°. This descent is through a larger chamber, with an arched roof thirty feet high, the roof being studded with stalactites. This glittering canopy fairly dazzles the eye as the torches flash upon it, and presents a weird and beautiful contrast to the sombre walls on either hand or underneath. After descending some 200 feet at the angle noted above, the cavern becomes more nearly level, and penetrates the mountain for a distance of about 1,200 feet, ranging from five to forty feet in height, and from ten to fifty feet in width. Many subterranean chambers as large as the principal one branch off from it on either side, and are often taken for the main one until an abrupt termination shows the error. At one point a fountain of pure cold water bursts from a bowl in the side wall, looking as if it might have been carved out there by human hands. The crystals from the roof are beautiful souvenirs, and specimens grace several Montana cabinets. Birch and Rattlesnake creeks, dashing down through neighboring ravines, abound in mountain trout, and the vicinity of the cave is the favorite haunt of Beaver Head county hunters. An old resident in the vicinity says he has killed no less than 150 deer within a radius of five miles in the last dozen years.

Proceeding northward toward Helena, the stage road crosses Madison county, and when readers are told that Madison county boasts three or four valleys as fair as our favorite Ruby, two or three of the grandest mountain ranges in Montana, and no telling how many mountain-locked lakes, beautiful waterfalls, and deep-riven cañons, they will realize that there is also something worth tarrying for here. Ruby range, in Madison county, gets its name from the many beautiful rubies found upon it, and also from the indescribable sunset tints it reflects when seen under the gradually fading light of evening. Silver Springs, near Salisbury in Ruby Valley, are worth visiting. Their tepid waters gush forth from the foot of the bluffs in copious quantities and are gathered in a miniature lake. A stream, which turns the wheel for one of the largest flouring mills in Montana, constantly flows from this collection of water, is carried through a ditch one mile and a quarter in length, and does its work in the coldest weather without containing the least particle of ice. The lake appears singularly beautiful in winter when nature is sometimes snow-clad and ice-bound on all sides. The bottom is covered with a thick growth of green verdure, the sky and sur-



MAIN STREET, BOZEMAN, MONTANA.

REACHED VIA THE UNION PACIFIC AND UTAH & NORTHERN RAILROADS.



LAKE ABUNDANCE, YELLOWSTONE PARK.

rounding objects are delineated beneath the crystal surface, while the musquash and articulate animals sport and swim in their warm home as though they enjoyed perpetual summer.

High up in Tobacco Root range, overlooking Ruby Valley, is a collection of crystal lakes, the most noted—Silver and Harrison—possessing such rare charms that they are the resort of Montana pleasure-seekers, whose choice is a sufficient testimonial. Another object of more than ordinary interest in southern Montana, is Madison River Cañon. The heavy waters of that great inland sea of bygone ages—which geologists love to tell us about—constantly washing against the Madison range finally forced an opening, carved out a cañon 15 miles in length, and created an egress for this vast body of water. There is no trail leading through this narrow defile; at places the perpendicular cliffs rise to a height of six or seven hundred feet on either side of the stream, thus cutting off any attempt that might be made to walk through it, and the river is lashed into too many whirlpools, and tumbles over too many rapids to admit of passing through in a canoe. Up the valley, hot springs and warm streams are numerous. Professor Hayden declares that “the valley of the Madison above the cañon is a marvel of picturesque beauty. The descent must be slight, for the river, with the branches which come in on either side, meander through the grassy meadows with the most remarkably sinuous course I have ever seen. The skillful landscape-gardener could gather some useful hints in his art from this region. The channel appears as though it had been cut out by the hand of art, and the little islands in the channel are of every conceivable form and of great beauty. This locality, with such a marvelously beautiful landscape, will ever remain one of the wonders of this region.”

In Ruby Valley, 16 miles southwest of Virginia City, by a fine carriage drive, are Puller's Hot Springs. Patients here were wonderfully enthusiastic at the time of my visit concerning the excellence of the waters and the superiority of Ruby Valley sunshine. The principal pool, which is now converted into a large swimming bath, is fed by some forty springs which boil from beneath. Sulphur and iron strongly predominate in these waters, and some marvelous cures of paralytic cases which they have effected have come under my notice. The temperature is 102°. Adjoining the swimming bath are three or four private plunge baths, each with neatly furnished dressing room. A few steps from the large pool is a spring throwing off a great volume of water of a temperature of 112°, presenting about the same analysis as the other, while a hundred yards distant is a beautiful fountain of cold water, strongly impregnated with sulphur. A neat little hotel and several cottages afford necessary accommodations for the health-seeker.

Proceeding northward to Helena our road passes through Jefferson county, where Jefferson River, the noble father of the Missouri, and the picturesque Boulder range afford many pleasing landscapes in their extremely diverse ways. Westward from Jefferson is Deer Lodge county, within whose confines I believe are more different elements of majesty and beauty in nature than in any area of like extent in Montana. There are several superb peaks, many charming lakes, and dozens of wonderfully pretty water-courses in the county. Powell's Peak, twenty miles west of Deer Lodge City, rising two miles above sea level, is a grand old sentinel, overlooking a region as large as all New England. Seven enchantingly beautiful lakes lie high up among the forests of

pine and spruce on the west and south sides of Mount Powell. Three of these lie within 1,500 feet of the mountain crest, their waters continually pouring in a series of glittering cascades over rocks and through rank masses of foliage to the valley, thousands of feet below. Flint Creek Falls, ten miles south of Philipsburg, consist of a cascade of water lashed into snowy foam for a distance of 500 feet down a heavily timbered rocky gorge. Deer Lodge county is quite mountainous and wooded—lovely and romantic to the end. Then, too, it has its fertile nooks, its beautiful and invaluable stretches of grassy uplands, which here and there are set in grandest forests, and its scores of crystal lakes and rivers alive with gamy and delicious trout.

The Deer Lodge mineral springs are among the most noted of those now utilized in Montana, and are so well improved, so delightfully situated and so well handled by the skillful physicians in charge—Doctors Mitchell and Mussigbrod—that they are rapidly attaining more than local celebrity. They are located in Deer Lodge Valley, 18 miles above the village of the same name. River, valley and county take their title from the unique geyser cone which marks the location of the springs. The cone, which is well represented in an accompanying illustration, is about 30 feet high, some 50 in diameter at the base, and contains a large warm spring at its apex. The Indians named it “Deer Lodge” because of its resemblance to a wigwam, with the steam rising from it like smoke from their council fires, and because in those days of the long ago the valley was filled with deer which often congregated in great numbers in the immediate vicinity. There is, moreover, an amusing Indian legend connected with this elevated spring. The pyramid in which it boils so incessantly is said to have sprung up in a single night. A dusky maiden had two lovers who here fought a duel. The wrong one was thrown to the bottom of the cavity; the wild maid sent an appeal to the Great Spirit for a mound to cover her lover, and the first dawn revealed this pyramid, through which all the lariats of the tribe tied in one fail to reach the bottom of the surging waters. Grouped closely about the mound are some 40 other springs, ranging in temperature from 115° to 150° , and whose medicated waters consist principally of iron, soda and iodine. A few yards below are the hotel and bath-houses and an asylum for the Territorial insane. The improvements have cost some \$16,000, and embrace such essentials as comfortable bath-rooms, dressing-rooms and a nicely furnished little home for those who wish treatment. The waters have proved especially efficacious in the cure of not only rheumatic and blood diseases but also of mental disorders. There is splendid trout fishing within stone’s throw, excellent hunting for large or small game in all directions, and the environs are composed of lovely, fertile valleys and picturesque mountain ranges. A large two-story brick hotel is one of the promised improvements of the near future.

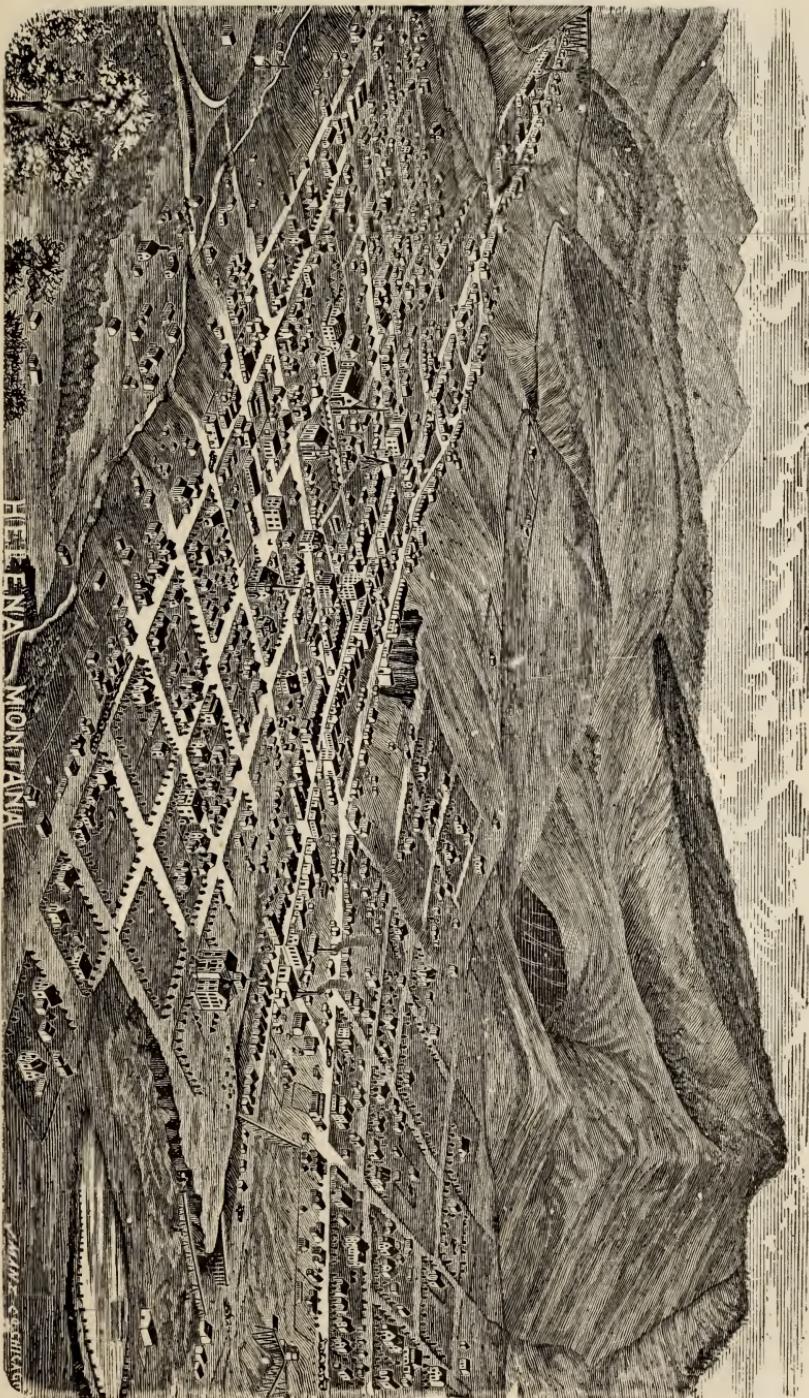
From Helena one can go north, south, east or west and find new and rare attractions at every step. The western boundary of Lewis and Clark county, in which Helena is situated, is the divide of the main range of the Rocky Mountains; the eastern is the Missouri river. From the highest peak to the level of the river the difference of altitude must be fully 5,000 feet, and the scenery includes all the varieties of the rugged grandeur of the great rocky barriers and peaceful vales that smile among the lowlands. There are no forests in the valleys, but the mountains are almost gloomy with the dark-browed firs and dense growth of pine.

Prickly Pear Cañon.—Eighteen miles north of Helena the Benton stage road enters one of Montana's most noted cañons—that of Little Prickly Pear river. Like most other cañons, the chief beauty of this one is its towering walls, overlooking a dashing mountain torrent whose course is often as crooked as a serpent's trail. Added to grand abruptness of cloud-piercing walls I found much quiet—almost indescribable—beauty in Prickly Pear Cañon during the hazy autumn days. Foliage is plentiful in every cleft of the rocks and on every inch of soil intervening between palisade and river, and never was autumn coloring more brilliant. The shades of carmine and orange, of pink and russet, mingling with the emerald of the pine, spruce and cedar, form bouquets more beautiful than are ever gathered. The rock-work, often rising from 500 to 1,000 feet above, is a slate formation whose coloring alone is beautiful at any season. It deepens from a dull gray to a deep purple, and the masses which have been ground to powder under our feet sometimes look like beds of rich brown and purple ochre. It cost \$50,000 to build eighteen miles of wagon road through this cañon, and the popular prices for tolls in early days were from five to ten dollars per team each way. Half way through is a beautiful, park-like opening of several thousand acres, where a gentleman named Fergus has one of the finest ranches in the country. Mountain walls fence in his splendid farm on all sides, and ward off outer winds in a most accommodating manner.

WONDERS OF THE UPPER MISSOURI.

In the heart of Montana, four thousand miles from the sea, the Missouri river presents such distinctive features of wildness, grandeur and beauty as are hardly dreamed of by those who witness its murky and treacherous meanderings through the prairie states. I refer especially to the 100-mile stretch of the upper river, taking in the most notable cañons, the Great Falls, and the vast meadowy mesas bordering the stream after its exit from the mountains. Eighteen miles north of Helena the traveler, in his journey down the river, is suddenly confronted by a lofty spur of the Rockies, which at first view seems to admit of no passage of the mighty stream. Proceeding a few hundred yards farther, however, he finds the current making an abrupt turn, and in an instant he has passed within the portals of the "Gate of the Mountains," a gash rivaling the grandeur of Yellowstone Cañon, and far exceeding in beauty the finest portion of the Hudson Highlands. The whole volume of the river is here for five miles confined to an average width of less than 300 feet, the mountain walls on either side rising perpendicularly for much of the distance over 1,000 feet, and in one or two instances leaning far out over the channel. The upper Missouri, generally so extremely swift, is here as placid as the surface of our most sheltered lakes, constituting an eternal mirror for the overlooking heights, and for the beautiful pines which spring from every crevice. The water is from ten to twenty feet deep throughout the cañon. The admirable view presented on another page will give the reader a good idea of the entrance. Art has yet for the first time to depict the glories of the inner cañon.

The grayish granite walls are turreted and pinnacled in a wonderfully striking manner, and rising so high above their water-washed foundations, with only a dainty arc of heaven's blue visible, fill one with emotions of awe and involuntary dread, akin to those which possessed the first voyagers of the dark river in the Mammoth Cave. Entrances to giant caves, never to be reached ex-



REACHED VIA THE UNION PACIFIC AND UTAH & NORTHERN RAILROADS.

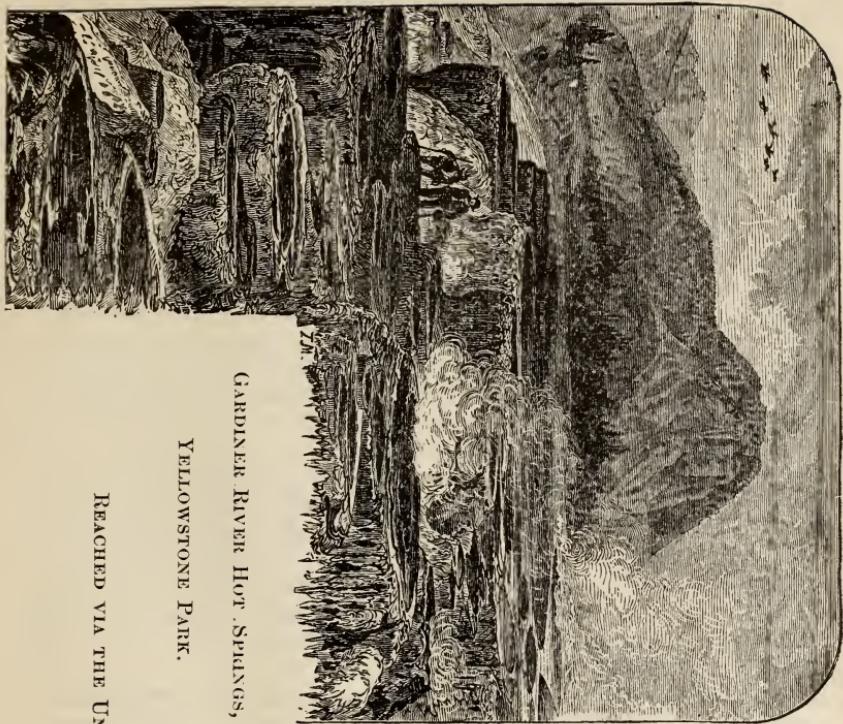
cept by means of ropes flung over giddy heights, are seen at numerous points. Occasionally blue sky is seen through eyelets carved in the highest towers. These heights are only homes for eagles and mountain sheep. The echoes they give forth make the human voice sound sepulchral, or the discharge of a rifle almost deafening. Large springs occasionally burst from the rocks, and mingle their waters with the great river. An occasional alcove, where a few graceful bunches of willows have scant foothold and shade the stream, tones down the picture to one of rarest beauty.

For three miles there is scarcely a single foothold at the water's edge for man or beast. The few natural fissures which do break these almost solid walls are jammed with huge broken pillars, angular rocks, and gigantic slabs of granite, forming natural bridges from brink to brink. But a little over half way down, and on the east side of the cañon, an immense gash is found, extending back half a mile from the water's edge into the mountains, and terminating in a frowning precipice. The unbroken rocky ramparts which crown it on three sides of course render it impassable from above. Ducks and geese are plentiful along this shaded retreat, and the translucent water is full of trout, grayling, garfish and suckers. The cove just described abounds in luscious wild raspberries, service berries and currants.

Ten miles farther down is Atlantic Cañon, also a gash of great attraction. At the lower end of this, and overlooking the river, is that strangely formed and noted northern landmark, the "Bear's Tooth." Its rocky tusks are plainly visible at Helena, twenty-five miles away, and from that or any other point of view its name seems quite apropos. It rises 2,500 feet above the river. Deep serrations in the gigantic mass of rock composing it rise from base to summit, foretelling some tremendous slides in the near future. One section of the "Tooth," weighing thousands of tons, became detached last spring, thundered down the mountain through the heavy forest which surrounds the base of the tooth proper, and cut a broad roadway, smooth and clean, which looked as if the sickle of a Titan had just completed a very heavy contract. Trees, boulders and underbrush were instantly hurled in shapeless masses to the river 2,500 feet below.

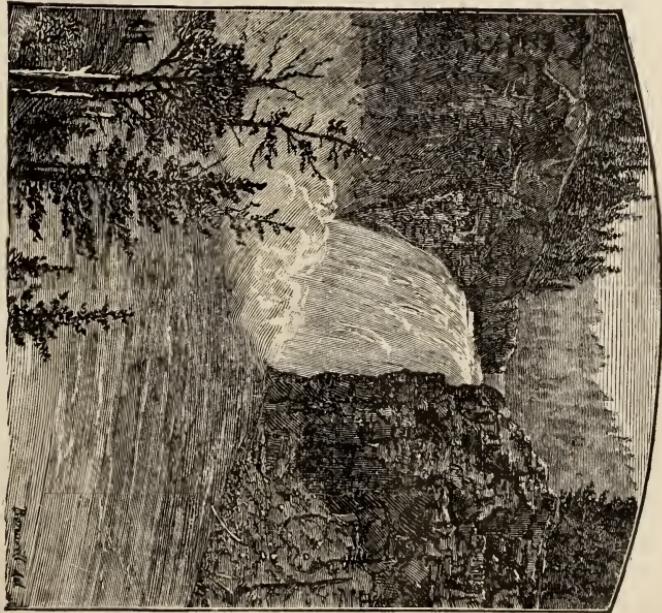
Some forty miles lower down the river, in the vicinity of the "Long Pool," which is a sluggish, lake-like widening of the stream, is the locality in which nearly all the explorers have heard the singular noises which sound like discharges of artillery, and which the savages for more than a century have called "The Mysterious Thunder." Roberts says: "The sound was exactly like the booming of a cannon some miles distant," and Lewis and Clark declared that it "consists of one stroke only or of five or six discharges in quick succession. It is loud and resembles precisely the sound of a six-pound piece of ordnance at a distance of three miles." The sound is generally accounted for in these days by a popular belief in the existence of geysers in some hidden recess in the mountains.

One hundred miles from Helena are the first of the Missouri River Falls. The "Great Muddy"—here as clear as crystal—is now making its way through and over the last mountain barriers which separate it from the outer plains. My approach to the different falls was over a grand plateau, whose general elevation is more than 500 feet above the river, and whose surface is one broad, grassy



GARDNER RIVER HOT SPRINGS,

YELLOWSTONE PARK.



UPPER FALLS OF THE YELLOWSTONE.

REACHED VIA THE UNION PACIFIC AND UTAH & NORTHERN RAILROADS.

meadow, dotted with numerous lakes. The principal falls, four in number, are scattered along for a distance of twelve miles, and the river may be said to be in a cañon for the entire distance, as all final approaches are made down almost vertical banks of from 200 to 500 feet in height. The first is known as the Black Eagle Falls. It is a vertical plunge of the entire river of twenty-six feet. Here in mid-river is the island upon which that antiquated Rocky Mountain eagle, now a subject of history, is passing away the golden days of a ripe old age in one eternal Fourth of July. The bird is minutely described by Lewis and Clark as the sole inhabitant of the island in 1805. The same one is noticed, only slightly crippled by age, by General Reynolds, who was on the spot in 1860; and then again by Engineer Roberts, who reports his pinions as badly dilapidated in 1872. Reynolds and Roberts both gave it as their solemn belief that this is the identical island, nest and bird first described by Lewis and Clark nearly seventy-five years ago. The gritty old sentinel looked old enough to our party to have participated in the affair at Bunker Hill.

The river is now one constant succession of rapids, whirlpools and falls for a dozen miles, having a total descent perpendicularly of nearly 400 feet in that distance. A short distance below the first falls is a mammoth spring, believed to be the largest in America, if not in the world. It boils up from between great fissures in the rock near the river into which it soon falls with a cascade of eight feet. Its volume is equal to that of an ordinary mountain stream 300 feet wide and two feet deep. The water is of a sufficiently bluish color to be traced down the Missouri for half a mile.

Four miles below the first are the Rainbow Falls, fifty feet in perpendicular descent. They are indeed the most beautiful falls I have ever seen, excepting Niagara alone. The entire river, 1,200 feet wide, here hurls itself over an unbroken rocky rim, as regular in its outline as a work of art, into a vast rock-bound amphitheatre, where the terrific commotion of the water is something awful to witness.

The Great Falls.—Six miles farther down are the "Great Falls," whose descent is ninety feet, and whose tremendous roar is often heard a dozen miles away. The river, here possessing a volume three times greater than that of the Ohio, is narrowed to 300 yards and passes between perpendicular cliffs some 200 feet high. Nearly half the stream next to the right bank descends vertically with such terrific force as to send continuous and always beautiful clouds of spray 200 feet in air. These gorgeous columns are often dissipated into a thousand fantastic shapes by coming into contact with glittering masses of snow-white foam, the whole under the radiance of the sun being enhanced to beauty indescribable by the richest colors of the rainbow. The balance of the river is precipitated over successive ledges of from ten to twenty feet, forming a magnificent prospect of fleecy foam 200 yards in breadth and 90 feet in perpendicular elevation. A vast basin of surging, foaming waters succeed below, their deep green color and fearful commotion betraying a prodigious volume and depth. Hastily making our way down the precipitous ledges to the very edge of the great pool, we were lost in wonder and admiration—a feeling which, when in the lapse of hours it did give way, was succeeded by one which resulted in our landing some splendid trout from more quiet eddies a short distance below. Occasional clumps of pine and cedar among broad, rocky dikes near the river add much to the general picturesqueness below the falls. Beaver,

mink and other fur-bearing animals are plentiful among the spray-dashed rocks, and we found splendid antelope hunting within rifle-shot of the river.

At night we camped on a grassy bench 500 feet above, and commanding a glorious view of falls, rapids and river. The night grew very dark and stormy, and just before seeking my blankets I stepped to the brink and enjoyed a long last look at such a scene as language or brush can never paint. Black as was the night and deep and narrow the cañon, that broad field of spotless foam cast a wonderfully weird light over the rushing waters—a light which, while it fascinated and seemingly bridged the fearful abyss at my feet, yet filled me with a dread undefined.

A drive from Helena to the "Gate of the Mountains" and return is an easy achievement between sun and sun. To visit the Falls, parties should either start with a light camping outfit from Helena, or take the Fort Benton stage to Sun River Crossing, 85 miles, and there procure team and necessary equipage. A party of four can make the trip from Helena to the Falls and return in either way in a week, having the finest fishing and hunting in the world en route, at a total expense of from \$35 to \$45 each—even less than the lower figure if they are economically inclined.

Hell Gate Cañon and White Sulphur Springs.—An exceedingly interesting trip is that eastward from Helena to White Sulphur Springs, Meagher county. You board a fine "Concord" coach (manufactured complete in Helena) at four A.M., rattle across the finest natural road in the world and make the entire journey of seventy-five miles in time for a luxurious bath and a tip-top supper. Your general direction is eastward, first across a twenty-mile stretch of the pretty Prickly Pear Valley, in which a prominent engineer has told us there are 96,000 acres of arable lands, then by easy grades over a romantic, timber-clad, spur of the Belt range to the noble Missouri, and on past alternate mining enterprises and almost untouched pasture and farm lands, to Smith River Valley, near the center of which these fountains are located.

Twenty miles east of Helena is the most wonderful defile I have seen in the Rocky Mountain country. It rests here near the well-beaten stage road in comparative obscurity, even with such a thrilling and suggestive title as "Hell Gate Cañon." Approaching it from below through a narrow valley we are suddenly confronted by what at first view seems an unbroken perpendicular reef or wall of rock rising some 350 feet above our pathway. What in the distance seemed a natural gap or pass in the rugged mountain range now presents the aspect of a mighty fortification stretched from summit to summit across the anticipated opening for a distance of 600 feet. But whence the brave little stream which with its song of victory dashes past us from that barrier toward the river, and whither the smooth, solid roadway which makes so confidently for the seemingly impenetrable stronghold? A quick turn in the road reveals a narrow opening to the right, when a second wall rises squarely toward the skies and gives for an instant little hope for further progress. But turning short to the left and advancing between the towering parallel dykes of solid rock some twenty paces, we are led to breathe more easily by finding this immense and wonderfully symmetrical reef rent from base to summit, the great mountain on either side being thus separated by a patch of Heaven's blue only six feet wide. From this gate we emerge into a beautiful grotto thirty yards wide, extending right and left to the tops of the mountains and bounded oppo-

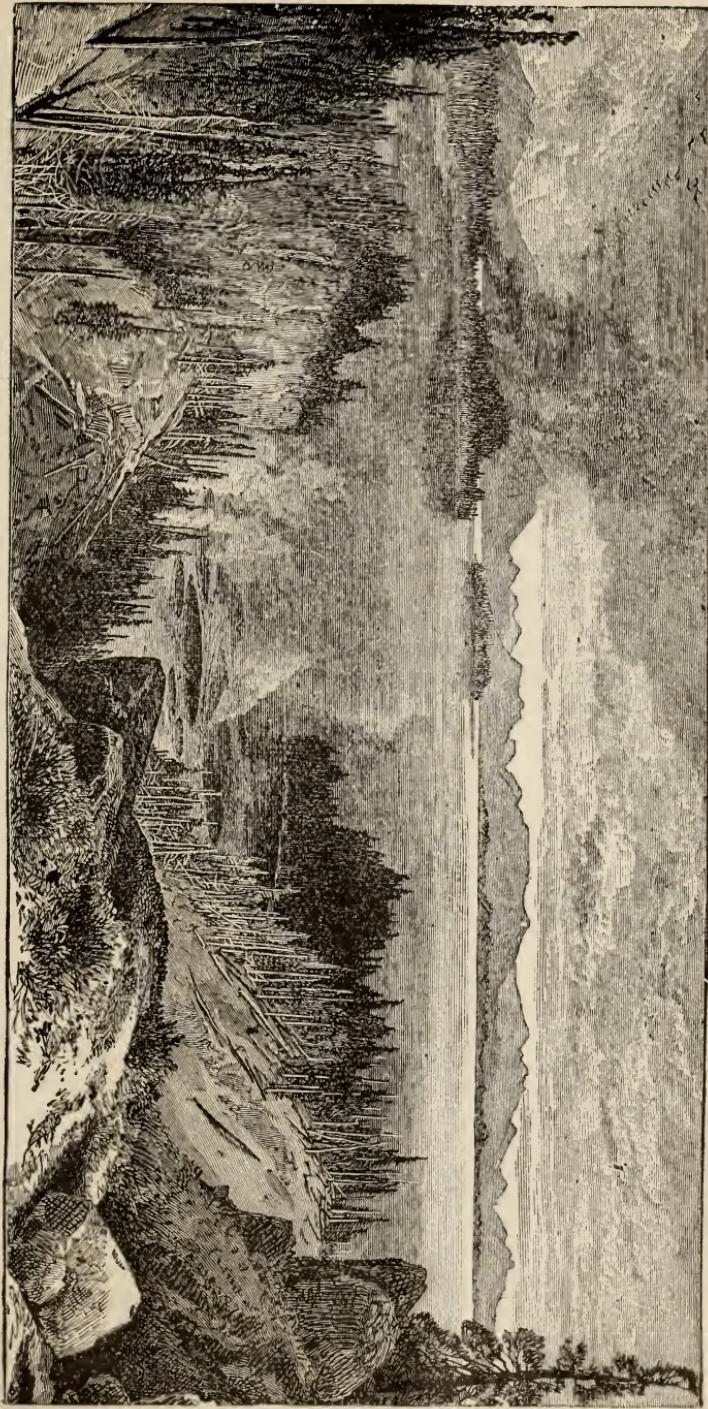
site the entrance by a rock formation almost identical in appearance with the one we have just passed. The dwarf pine, wild rose and other graceful shrubbery are now found in profusion to tone down the rugged surroundings, while here and there throughout the grotto are giant eruptions of granite which resemble church spires, turrets, or whatever fancy may dictate. Passing through the third gate, whose walls are also only six feet apart and from 300 to 400 feet high, we find at the left the "Devil's Slide" of Weber Cañon, Union Pacific Railroad, duplicated on a tremendously large scale. The slide is about 1,000 feet long up the mountain side, is enclosed by walls 200 feet high and as straight as the side of a house, and terminates at the top in a precipice of 200 feet. We climbed to this and found quite a cave in which wild animals have taken refuge. Beyond the fourth gate the grandeur abruptly terminates in a wooded gulch.

High up in the right-hand wall at the first entrance is the "Devil's Watch Tower," a cave with a bleak, dismal looking opening, which leads no one knows where, but which residents have claimed, was in early days the abiding place of a genuine Rocky Mountain hermit. The outline of a gigantic human head ornaments one of the gates on the right. The road in passing through the gates crosses substantial bridges, while the creek makes its exit underneath. The wild and wonderful gash was many years ago the loop-hole for savage wanderers who dashed to and fro through these mountain ranges, and one of the walls here bears curious hieroglyphics left by them.

The road from the Cañon to White Sulphur Springs lies first over a dozen miles of bench-lands flanking the Missouri Valley, where the shining river, in the midst of meadow and willow, presents a beautiful picture all the way; then for another dozen miles through that golden corridor, Confederate Gulch, and on over a picturesque range into Smith River Valley, in whose upper portion, in a delightfully picturesque region, these springs are located. Coming more to the point, the little settlement of White Sulphur Springs is located within stone's throw of the north fork of Smith river and about seventy-five miles east of Helena. Beautiful meadows and verdure-clad slopes stretch off for a dozen miles in nearly all directions and finally lose themselves in pine-decked spurs of surrounding mountain ranges. The springs proper consist of some fifteen large sulphur-scented fountains, the waters ranging in temperature from cold to 126°, and, springing almost from the same basins, a few with waters cold and pure as those which dash from the mountains above. Basins, channels and baths of sulphur waters are coated with great flakes of sulphur, which, when dried and ignited, burns very freely. These are classed "saline sulphur waters," of which Prof. Watson, an eminent authority on such matters, has much to say that is favorable. They are especially applicable to the cure of rheumatism and the long train of diseases led by or intimately associated with dyspepsia, gout, liver complaints and impurities of the blood. Patients suffering with such disorders often seem to derive about as much benefit from drinking the waters as from bathing in them. As high as 120 grains of medicated matter are found to the gallon of water. Among the improvements are a large, new two-story hotel, in which Brussels carpets and nice soft beds are leading features, reception and dining halls, billiard hall, extensive stables, several cottages for guests, two large plunge baths, a number of tub baths, etc. The water is conveyed through pipes from the springs to the several bath-houses, and is so arranged that any desired temperature can be had. Some neatly-furnished sleeping-rooms have baths at-

REACHED VIA THE UNION PACIFIC AND UTAH & NORTHERN RAILROADS.

YELLOWSTONE LAKE.



tached, and are so arranged that invalids can be treated with care, and without exposure. Dr. William Parberry, the owner and resident physician, possesses a wide reputation as a successful practitioner. The cost of living is as reasonable as in other parts of the country, and, indeed, the place is a home in the true sense of the term. Half a dozen trout streams flow near by, and hunting within half a day's drive is very good.

The Flathead Lake Region.—I have already alluded to the beauties of Bitter Root Valley scenery, and must add that northwestern Montana is crowded with superb views, and that the mountain ranges are there more rugged than in the sections thus far described. Flathead Lake is perhaps the most interesting feature here. It is some twenty-eight miles in length, has an average width of ten miles, and is embosomed in one of the loveliest and most fertile countries that the imagination can well picture. Stretched across its center, like a cluster of emeralds, is a chain of beautiful wooded islands, and upon its clear, broad surface wild water-fowl of every description, even to the sea-gulls, disport themselves. Shaded on two sides by towering cliffs, its other extremities lie among peaceful meadows, and lave sloping shores of rare beauty. Around the foot of the lake, and amid the most delightful scenes, is grouped a Flathead Indian settlement, where snug houses, well fenced fields, lowing herds and waving grain give evidence of the rapid advance of those natives in the ways of civilization and thrift. Here it is that the Pend d'Oreille River takes its rise, rushing and leaping through narrow gorges, and again widening out into a broad and placid stream, winding through lovely valleys for hundreds of miles, when it falls into the Pend d'Oreille Lake, a sheet of water larger than the Flathead Lake. Flathead Lake is about 100 miles from the village of Missoula by a good wagon road.

Near St. Ignatius Mission, distant some forty miles from Flathead Lake, are the "Two Sisters," a pair of cascades, for a description of which I gladly draw upon the notes of the lamented and eloquent General Meagher: "Topping a low range of naked hills, we had a sight which made the plastic heart of the writer dilate and beat and bound and burn with rapture. Beyond there, walling up the horizon, were the Rocky Mountains, rearing themselves abruptly from the plains and valleys—no foothills, no great stretches of forest, to detract from the magnificent stature with which they rose and displayed themselves unequivocally, with their bold and broken crests, with their deep and black recesses, with their borders of white cloud in all their massiveness and stern, cold majesty, in the purple light of a midsummer evening, the calmness and the glory of which were in full consonance with the dumb, gigantic features of the scene. Right opposite, leaping and thundering down the wall of a vast amphitheatre that had been scooped out of the mountains, was a torrent, bounding into the chasm from a height of fully two thousand feet, but looking as though it were a bank of snow lodged in some deep groove, so utterly void of life and voice did it appear in the mute distance. A mass of trees blocked the bottom of the amphitheatre; and following the torrent which escaped from it after that leap of two thousand feet, thousands and tens of thousands of trees seamed the valley with a dark-green belt, all over which the hot sun played in infinite reflections and a haze of splendor. The path to this chasm lies through a dense wood, the beautiful and slender trees in which are closely knitted together with shrubs and briars and snake-like vines; while vast quantities of dead timber and immense rocks, slippery with moss and trickling streams thin

and bright as silver threads, encumber the ground, and render it difficult and sore to travel. There are few tracks there of wild animals, and all traces of the human foot are blotted out, so rarely is that solitude visited even by the Indian.

"As we neared the foot of the Elizabeth Cascade—for such was the name given to the headlong torrent—great was our surprise to find another torrent equally precipitous, but still more beautifully fashioned, bounding from the edge of the opposite wall; and as a jutting rock, sceptred with two green trees of exquisite shape and foliage, dispersed its volume, the torrent spread itself into a broad sheet of delicate foam and spray, white and soft, and as full of light and lustre as the finest lace-work the harvest-moon could weave upon calm waters. This cascade is completely hid from view until one stands close under it, and the Fathers of the Mission, strange to say, knew nothing of it until our explorers told them exultingly of their discovery. To this they gave the name of the Alice Cascade, christening them both *The Two Sisters.*"

In closing these scattering notes on a topic which I realize, only too well, should be treated by readier and more able pens, I should not forget that quiet and deserving resort, the Helena Hot Springs, four miles from Helena. The springs referred to are very hot, affording a luxurious bath, and their water is an excellent tonic when taken internally. Soda and sulphur are predominating constituents of the hot springs, while a large, cold iron spring bursts out near by. The hotel and bathing accommodations are fair, and the drive is an extremely pleasant one. The spot is naturally very attractive. It must come in for a large share of attention in the golden age of Montana when the iron horse, now so rapidly approaching from the south, is finally ushered upon the scene. Among other resorts worthy of mention are the Clancy and Pipestone Springs of Jefferson county, and Lund's Hot Springs of Gallatin county, each having fair hotel accommodations, and being convenient to excellent trout streams and hunting grounds. Patients have gone to these with chronic cases, believed to be hopeless, of neuralgia, paralysis, dyspepsia, inflammatory or mercurial rheumatism, or other complaints for which the Arkansas springs are considered a specific, and, after a few months of bathing and drinking, have left completely restored.

HUNTING AND FISHING.

It is almost needless to write concerning the game fields of Montana. The finest hunting and fishing in the world is afforded in every nook and corner and sometimes within easy walk of leading towns. During the past winter several of my friends at Helena were often out after deer, and in the course of a day's hunt would kill from two to half a dozen each, almost within sight of the city. Buffalo, elk, deer, antelope, mountain sheep, bear, moose, and mountain lion, are all found in great plenty in certain haunts, while deer alone are common everywhere. Such fur-bearing animals as the beaver, otter, mink, fox, muskrat, marten, fisher, and wolf, are taken by the thousand, for, be it remembered, that Montana and the neighboring British Possessions are now furnishing a very large proportion of the furs which reach the prominent marts of the East. In corroboration of this it might be mentioned that the fur shipments from Fort Benton have reached the value of over \$5,000,000, that the trade often runs up to half a million dollars per year, and that 60,000 buffalo robes, with thousands of other skins, were shipped down the Missouri in 1878. After hunting in nearly

every Rocky Mountain state and territory I can say that I have enjoyed some of my very best antelope hunting within a day's ride of Helena. Rivers and lakes, nowhere else so numerous, are covered with geese, ducks, and other water-fowl. Of other small game I noticed as especially plentiful, prairie chickens, grouse, sage-hens, and rabbits.

As for trout, Montana waters are simply alive with them. During some 3,000 miles of travel in the Territory at different seasons I cannot say that I ever halted two nights where I could not catch a nice mess in an hour. They are so plentiful in different lakes and streams that they are caught by the wagon load for market. The real delicate gamy mountain trout, weighing from half a pound to two pounds, and the salmon trout, affording just about as much sport and as fine eating, weighing from two to ten pounds, are often found ready to respond to fly or bait in the same waters. Then there are other varieties of fish in some of the streams, although none are so numerous as the trout. Among these are the grayling, garfish, sucker, catfish, and pike. In brief, the angler or huntsman cannot go amiss in Montana, and it would be superfluous for any one to advise a particular locality in the Territory as possessing advantages over others in this respect.

BUSINESS, PRODUCTIONS, COST OF HOMES, ETC.

The productions and annual business of this small and scattered population is something difficult of comprehension to those accustomed to the measured tread of "down east" communities. The population is not more than 35,000, while the productions for 1878, of minerals, agricultural products, manufactured articles, etc., are reliably stated at \$16,500,000 — or over \$450 for every man, woman and child in the Territory. The business of the Territory has doubled in the last ten years, and the population has increased 12,000 since 1876. The total assessed valuation of property in the Territory is \$12,594,579.45, a net increase of \$2,605,039 since 1876. Following is a table showing the assessed valuation of each county in Montana in 1877 and 1878. The figures are certainly eloquent:

Counties.	1878.	1877.	Increase over 1877.
Beaver Head.....	\$986,651 00	\$843,182 00	\$143,596 00
Chouteau	596,642 00	545,850 00	50,792 00
Custer.....	329,231 02	236,435 00	92,796 02
Deer Lodge.....	2,341,268 00	1,946,044 00	395,224 00
Gallatin	1,3*6,340 00	1,190,060 00	196,280 00
Jefferson	755,633 15	664,901 00	90,762 15
Lewis and Clark.....	2,892,935 00	2,787,540 00	105,395 00
Madison.....	1,790,662 00	1,632,010 00	159,652 00
Meagher	867,998 28	761,081 00	105,917 28
Missoula	647,189 00	586,774 00	60,418 00
 Totals.....	\$12,594,579 45	\$11,193,874 00	\$1,400,704 55

Freight and expressage amounting to about \$1,000,000 was paid here during the past year on imports and exports. One firm at Helena pays as high as \$80,000 annually as freightage on its goods. There are now 2,500 wagons, 8,500 animals and 1,400 men employed in the freighting business in the Territory, and the total capital invested in the different lines is not less than \$1,500,000. The capacity

of these trains is 5,000 tons, or 500 car-loads at one loading. The imports via the Union Pacific Railroad in 1878 foot up 7,000 tons; exports, 3,000 tons. Imports via the Missouri and Yellowstone rivers in 1878, 11,000 tons; exports via the Missouri and Yellowstone rivers, 1,800 tons. Beef cattle exported via the Union Pacific Railroad and on foot, 4,000 tons. Total imports by rail and river, 18,000 tons; total exports, 8,800 tons. Among the imports are 3,500,000 pounds of salt from the Idaho salt mines, and among the exports are 60,000 buffalo robes, 1,000,000 pounds of wool, 6,350,000 pounds of silver and copper ore, 75,000 pounds of pure silver, and 22,000 head of cattle. The banks of Montana paid \$63,000 in express charges on gold and silver bullion shipped out in 1878, and the weight of express matter brought into the Territory was 500,000 pounds.

The annual expense of governing the Territory, we are informed, is less than \$45,000, an amount which Montana has more than repaid each year. All the remaining territories and most of the states are on the other side of the ledger. Montana, although younger than any of the other territories, has paid a total of \$732,394.68 into the internal revenue fund of the government, while Arizona has contributed but \$137,329.56; Dakota, \$108,976; Wyoming, \$112,655.09, and Utah, with a population four times as great, has in twenty-eight years paid a total of \$100,000 less than Montana in fourteen years. In 1878 the federal government received returns from Montana to the amount of \$66,018.74, divided as follows: Internal revenue collections, \$27,344.47; land office receipts at Helena and Bozeman, \$29,404.27; taxes from national banks, \$6,100. Thus far over 10,000,000 acres of land have been surveyed in the Territory. The Helena and Bozeman land offices in 1878 received \$30,000 as fees on lands purchased or entered under the different acts, and the total number of acres represented by these fees was 75,000—a largely increased business over the preceding year. Note the following table of exports and imports, internal revenue collections, and population for each of the past three years, as an evidence of Montana's thrift:

	Estimated Population.	Assessed Valuation.	Int. Rev. Collections.	Imports in pounds.	Exports in pounds.
1876	23,000	\$ 9,939,540	\$20,982.80	25,000,000	4,000,000
1877	28,000	11,193,874	20,729.58	32,000,000	19,000,000
1878	35,000	12,594,579	27,364.87	37,000,000	27,000,000

One never hears the cry of hard times emanating from Montana business men. Business obituaries are rarely written. Only one failure of any magnitude has occurred in the Territory for years, and the commercial rating of Montana business houses is higher than that of any state or territory. Business is generally done on a cash basis. Individual firms at Helena have sales of merchandise as high as \$500,000 each per annum, and located in that little city of only 5,000 inhabitants, the First National Bank cares for an average of \$1,000,000 in deposits, and reports a cash business of \$28,000,000 in 1878. The latter's net profits in 1878 were \$40,000 on a paid-up capital of \$100,000. There were forty steamboat arrivals at Fort Benton last season, and thirty-four at Miles' City, on the Yellowstone. A fleet of twenty boats, costing altogether over \$500,000, and employing 500 men, are engaged in navigating Montana waters.

Few men are so poor that they cannot obtain a good home in Montana; still, the emigrant of to-day will find his share of difficulties to encounter. Hard work

and careful management for the first few years are indispensable. Occasionally, grasshoppers may gather some of his grain, or early frost nip the more tender vegetables. It may not be advisable for those advanced in years, or those who are comfortably settled in old and well established communities, to incur the hazards incident to a removal to a new country. And it should be further understood that the wholly destitute will encounter at first greater hardships here than those they seek to escape. Above all things, a man of family should have enough ready money to support his people until he can raise a crop. He will have plenty of time to make enough to pay for his land if he occupies government domain. Of course, homestead and preëmption laws apply to government lands here as elsewhere. The homestead law grants settlers 160 acres, on condition of continued residence for five years, and the payment of land office fees, which altogether do not exceed \$18. Preëmption laws grant settlers 160 acres at \$1.25 per acre on condition of a continued residence and improvement for one year. The timber culture act permits a citizen to enter 160 acres on condition that one-fourth of the area shall be planted to trees, cultivated and protected for eight years. Under the operation of these laws, any settler can become possessed of from 240 to 320 acres of land at a trifling cost. Special privileges are granted honorably discharged soldiers, they being allowed to deduct each year of their service not exceeding four years, from the period of residence required of others to perfect a homestead title. The desert land act applies especially to regions like Montana, and permits any settler to take up 640 acres of lands which could not be cultivated without artificial moisture. A cash payment of twenty-five cents per acre is required at the time of entry; irrigating ditches must be constructed to cover such tracts within three years, and at any time during that period the claimant can make his title good by paying \$1 additional per acre, and making proof that the land has been reclaimed by irrigation.

Fencing and building material being abundant in nearly all localities, the matter of making improvements is one of less difficulty than in almost any country I know of. Nearly all residents first built good comfortable log houses at almost no expense but their own labor, and the same can be done to-day. This also applies to fencing. Improved farms in the best settled valleys often sell quite cheaply—at from \$12 to \$15 per acre—for the very evident reason that there are thousands of locations open to homestead or preëmption where the owners can make the same improvements for that amount of money or less. Exceptionally fine locations and first-class improvements of course run the price of some farms up to \$40 per acre. Stockmen often do not own a foot of land, generally staying about where they please, as long as they please—in such a boundless field occasionally moving to pastures new.

Knowing that he can here establish himself comfortably at a trifling outlay, the settler may also like to learn that through humane exemption laws a homestead of the value of \$2,500 is free from sale and execution. There are also opportunities for trusty men without means to rent farms or take stock on shares, the provisions of such contracts always being more liberal than in the East.

Where several come in one family or colony, it is the best plan to send some of the male members two or three months in advance of the party, who may look around sufficiently to secure a good location, and when the land is located, put up the necessary improvements for the shelter of the rest when they shall

arrive. To those who design emigrating in an organized body, including representatives of all the avocations and industries of a full-fledged community, Montana offers special inducements. She includes in her vast extent of surface hundreds of valleys, separated from each other by mountains or, more often, by high, rolling, grass-covered hills or plateaux, where free pasturage in profusion for years to come will hold out extra inducements for stock growing. Entire valleys of unsurpassed richness and beauty are still to be found without a tenant, while in every considerable river valley abound numerous natural basins, adapted to colonies of any size from tens to hundreds. Here can such colonies surround themselves with all the institutions and conveniences of their former homes, giving old, familiar names to new and grander features of nature, and lay the foundation of fortune in health and wealth for themselves and posterity. The increased security, contentment, and stimulus to exertion that attend such schemes of colonization, particularly recommend them to those who think of coming to Montana.

Emigrants, tourists and health seekers, one and all, are reminded that upon reaching Montana they will find just one item necessary—*money*. It is useless for any one to load himself down with the common necessaries of life, and transport them to such a region as Montana. Outfitting houses of every nature, with such immense stocks of goods as are rarely found in cities of 20,000 inhabitants in the east, are found in all the leading towns. The shipments made by these firms are so large and judiciously handled that no individual can afford to bring articles of ordinary use from distant states.

The Territory affords fine opportunities for business men of either large or moderate means, who will be content with profits ranging from 15 to 25 per cent interest on capital invested. Money is rarely loaned on any kind of collateral at less than 2 per cent per month interest—the rate ranging from $1\frac{1}{2}$ to 3 per cent. Capital, directed by sagacity and enterprise, possesses great advantages in Montana, as elsewhere; indeed, the new avenues being continually opened by the rapid development of a bountiful new country multiply the opportunities for its profitable employment. There is scarcely a reputable vocation of any kind, wherein the same capital and good management which insures success in eastern communities, will not yield far greater returns here. Now, above all other periods, is the time to invest money in real estate, mines or live stock, as the early coming of the railroad will enhance the value of such property to a degree not now possible to comprehend.

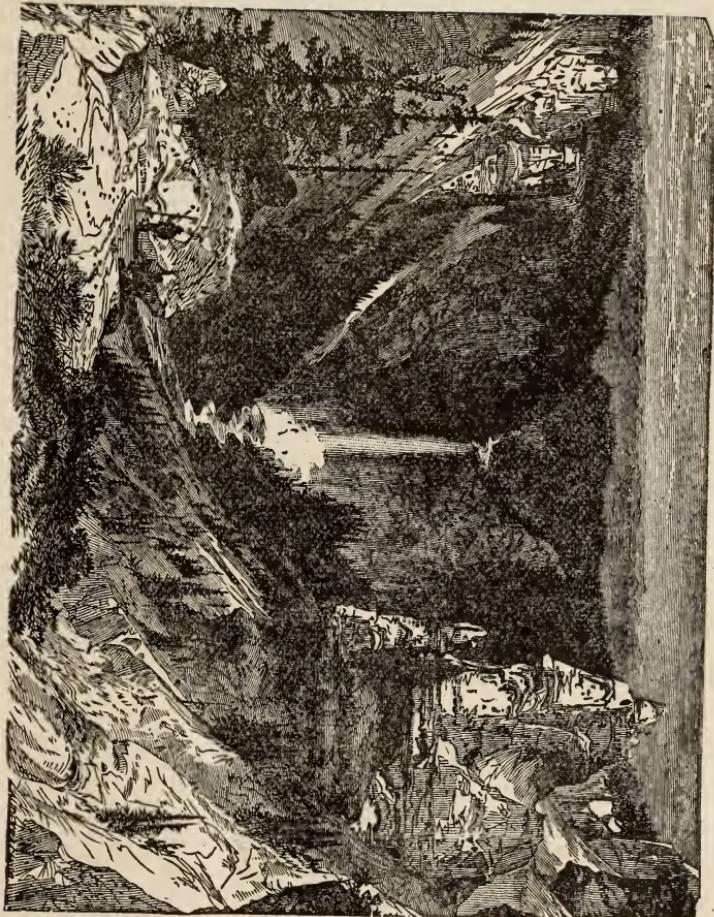
Great and undoubted as are the advantages which a union of money and industry possesses, there is no country where unaided muscle, with a plucky purpose and economy, will reap such a reward as in Montana. By reference to the table of wages given below, it will be seen that salaried people have a vast advantage in the west, where their wages are from 50 to 200 per cent higher than in the east. Young men who will labor, and not insist in hanging around the cities, can make and save—while keeping themselves comfortably and respectably clad—from \$250 to \$400 each per year. Mechanics, of course, can largely increase this sum:

AVERAGE WAGES IN THE EAST AND IN MONTANA.

Employment.	In the East.	In Montana.
Bakers, per month and board.....	\$25 00	\$65 00
Blacksmiths, per day	2 50	4 50
Bookkeepers, per month	70 00	125 00
Bricklayers, per day	3 50	6 50
Butchers, per month and board.....	24 00	50 00
Brickmakers, " "	20 00	50 00
Carpenters, per day.....	2 50	4 50
First Cook, per month and board	60 00	110 00
Second Cook, " "	30 00	55 00
Cooks in families, " "	11 00	35 00
Chambermaids, " "	10 00	30 00
Clerks, per month	50 00	90 00
Dressmakers, per month	25 00	70 00
Dairymen, per month and board.....	25 00	45 00
Engineers in mills, per day.....	2 00	3 50
Farm hands, per month and board.....	15 00	42 50
Harness-makers, per day.....	2 00	4 50
Hostlers, per month and board	15 00	45 00
Laundresses, " "	12 00	35 00
Laborers, " "	15 00	35 00
Lumbermen, " "	28 00	55 00
Machinists, per day	2 75	4 50
Miners, "	2 25	3 50
Millers, per month and board.....	25 00	65 00
Millwrights, per day.....	2 50	4 50
Painters, per day.....	2 25	4 00
Printers, per week.....	15 00	25 00
Plasterers, per day	2 50	5 50
School Teachers, per month	30 00	80 00
Servants, per month and board	11 00	35 00
Shepherds, " "		40 00
Stone Masons, per day	3 00	6 00
Teamsters, per month and board.....	18 00	45 00
Waiters, " "	16 00	55 00

Montana has never, like some other western sections, been flooded with labor. The cause is very apparent in its distance from the railroad, and the consequent expense and trouble necessarily incurred in getting there. The industrious carpenter, cook or machinist, as seen from the above, gets higher wages in Montana towns than the confidential bookkeeper of a representative eastern business house; while the farm hand, laborer or herder, who scorns to work more than ten hours per day, commands more pay than the reliable, skilled workman in any eastern state.

Board at first-class hotels in the principal cities is from \$2.50 to \$3.50 per day for transient custom, or from \$12 to \$18 per week. Smaller and very comfortable houses have rates varying from \$7 to \$10 per week. Cottages of four or five rooms rent in Helena or Butte at from \$25 to \$35 per month; at nearly all other points for considerably less. Building material, at retail, averages about as follows, at all points: Rough lumber, \$20 to \$25 per thousand feet; dressed and matched flooring, \$40 to \$45; dressed finishing lumber, \$40; lath, \$7 per thousand feet; shingles, \$4.50; good four panel doors, from \$3.50 to \$5 each, according to size and finish; common sash, glazed and primed, \$3 to \$4.50 each; blinds, \$3 to \$4.50; brick, \$10 per thousand at the yards, or \$18 in the



GRAND CAÑON OF THE YELLOWSTONE.

REACHED VIA THE UNION PACIFIC AND UTAH & NORTHERN RAILROADS.

wall; lime, 60 cents per bushel. Building hardware same as in Ohio or Illinois, with about four cents per pound added for freight. It is safe to estimate the average expense of living at twenty per cent higher than east of the Missouri.

Good two-horse teams can be bought in any of the agricultural districts at from \$150 to \$225; team of two mules, \$200 to \$300; oxen per yoke, \$80 to \$100; saddle horses, \$50 to \$75; saddle ponies, \$25 to \$40; pack horses, \$35 to \$50; livery rates are for double team and carriage, \$9 to \$12 per day; horse and buggy, \$6 to \$8; saddle horse, \$2 to \$3; the latter can be hired by the week or month at from 50 cents to \$1.50 per day.

ROUTES AND RATES.

There is but one all-the-year route to Montana, and that possesses vast advantages over all others *at any season*. It is via the Union Pacific Railroad from Omaha to Ogden, 1,032 miles, time two days; thence via the Utah & Northern Railroad to Eagle Rock Station, Idaho, 212 miles, time ten hours, and thence to Virginia, Helena, Butte, Deer Lodge and other central points in Montana, via the Gilmer and Salisbury stage lines, the distance to these averaging about 275 miles and consuming from 36 to 72 hours. Fare from Omaha to either of the points named, first class, \$100; second class, \$75; emigrant, \$45. Through fare from New York city, via Omaha and the Union Pacific, is — first class, \$139; second class, \$121.25; emigrant, \$63.50; from Chicago — first class, \$116; second, \$103; emigrant, \$58; from St. Louis — first class, \$115; second, \$103; emigrant, \$55.50. Holders of second class and emigrant tickets, via Gilmer, Salisbury & Co's line, will both be carried from the railway terminus to destination in covered mail wagons. One hundred pounds of baggage carried free by rail; forty pounds free by stage, on first class; fifty pounds free by wagon on second class and emigrant; extra baggage on stage and wagon lines, fifteen cents per pound. Stages and wagons run daily.

It is needless to enlarge upon the splendid equipment, the steel track and the lavish attention offered tourists on the great overland route — the Union Pacific. At the head of all American railways in everything pertaining to excellence of management, it gives the Montana-bound traveler a start on this northern journey which he must always remember with feelings of extreme pleasure. The Utah & Northern — the longest and finest narrow gauge railway west of the Rockies — in close connection with the large and comfortable Concord coaches of the Gilmer and Salisbury Line, is enabled to render the completion of the journey as pleasant and speedy as could be expected or desired. Fair eating stations along the stage line, the telegraph always at hand, many vistas of beautiful scenery, some of the best mineral and agricultural districts in the West, and an opportunity of seeing almost the entire breadth of Montana, are among the advantages *offered by this route exclusively*.

Splendidly equipped stage lines run from the principal cities to all points of the Territory, the fares averaging about 15 cents per mile. Telegraphic rates from Helena to points east of the Missouri River \$2.50 for ten words. Meals at eating stations on stage lines from 75 cents to \$1.

MONTANA SOCIETY.

Arriving in Montana, the new comer will have many preconceived notions concerning society, schools and religious privileges happily dissipated. No people read more than these, and few communities are as lavish in their expenditures

to secure the best class of religious, educational and beneficent institutions. The report of the United States Commissioner of Education shows that only six states, and none of the territories, excel Montana in the amount of money raised per capita for educational purposes. There are in the Territory eighty-five public school-houses, costing nearly \$100,000, and these are supplemented by an excellent college and several sectarian institutions, offering the usual advantages for instruction in the higher branches. All religious denominations are represented, their churches, twenty-six in number, costing a total of \$125,000. Secret and benevolent societies and libraries are found in all the cities and mining camps. The Masonic and Odd-Fellows' societies have erected several fine temples, which cost from \$20,000 to \$5,000 each. A high order of intelligence and an unstinted hospitality are reigning attributes of a majority of those who have cast their fortunes in this singularly beautiful, rich and prosperous domain.

Cities and Towns.—Helena is situated in the southern part of Lewis and Clarke county, 15 miles west of the Missouri and 290 miles north of the Utah & Northern terminus. Its population is about 5,000, and we find it a compact and splendidly built little city, with a taxable wealth of \$2,000,000. Fine and capacious blocks line the business streets, while elegant and tasty residences, amid beautiful lawns and flower-gardens, adorn the hillsides overlooking. There are numerous and very creditable churches, schools, libraries, a well organized board of trade, United States assay office, Masonic and Odd-Fellows' halls, good hotels, an asylum and hospital, and two of the best daily and weekly newspapers published in the far-west states or territories. The latter are the *Herald* and *Independent*. The Masonic Temple cost \$45,000; public school, \$20,000; assay office, with improvements now in progress, \$60,000; Roman Catholic church, \$18,000; Methodist Episcopal church, \$10,000; court-house and jail, \$35,000, and many residences cost from \$5,000 to \$15,000 each. Two banks cared for an aggregate of \$1,000,000 average deposits in 1878. They sold exchange to the amount of \$3,500,000, bought \$600,000 worth of gold dust and shipped over \$1,000,000 worth of silver bullion. The First National, by the way, is an exceptional institution of its kind. Its cash business frequently runs up to \$200,000 per day, and averages \$75,000 per day the year through, or a total business in twelve months of nearly \$28,000,000! It paid \$23,000 express charges on its gold and silver bullion shipments in 1878. Helena's grocery trade in 1878 amounted to \$1,125,000. Two firms exhibit sales of \$250,000 each, and eight firms a grand aggregate of \$1,000,000. Two hotels, "Cosmopolitan" and "International," registered 12,000 guests in 1878, and a number of smaller houses probably as many more. The Helena postoffice transacted money-order business to the amount of \$425,000 in 1878. Over 3,000 orders were issued, and 1,500 paid. The two newspapers have a capital of some \$40,000 invested, and do a business of \$100,000 annually. One firm imports 1,000,000 cigars and, sad but true, 8,000 dozen bottles of beer. Nine daily and tri-weekly stage lines gather here the travel and trade of a region twice as large as the Empire State. The men and animals thus employed are counted by hundreds and the miles of road traversed run up in the thousands.

Butte City—the second in size and the most important mining center in Montana—is located near the southern edge of Deer Lodge county, 250 miles north of the Utah & Northern terminus; population, 3,000; altitude, 5,800 feet.

Its broad streets are lined with solid business blocks and tasty residences—all a growth of about three years. The greatest silver and copper mines of the Territory are located within sight of town—indeed, many run under the streets, over 3,000 quartz mines have been located in the immediate vicinity. A dozen mills and arastras are constantly busy crushing the rich silver ores. Among these the Alice mill costing some \$250,000, the Lexington, \$40,000, and the Dexter, \$90,000, are models of their kind. The total yield of the Butte mines in 1878 is placed at over \$1,000,000, and the ore shipped east for treatment aggregates nearly 3,000,000 pounds. Butte has good churches, schools and an excellent newspaper—the *Miner*—which is about to be issued daily, instead of weekly, as formerly. Its numerous busy quartz mills, smelters, foundries and planing mills, and great mining activity, together with its extensive building operations, render it one of the liveliest and most thrifty cities in the Rockies. Fifteen fine brick fire-proof business blocks were erected here in 1878.

Deer Lodge City, county seat of the county of the same name, is beautifully located on the east bank of Deer Lodge River, and is distant from the Utah & Northern winter terminus about 280 miles. It contains 700 inhabitants, is tastily built, and is a general supply and distributing point for all the fertile valleys and mining districts for forty miles around. It is the educational center of the Territory, containing a public school of exceptionally high grade—the Montana Collegiate Institute—and a Roman Catholic boarding school under charge of the Sisters of Charity. The Collegiate Institute building, a fine specimen of architecture, has just been completed and furnished with the most approved apparatus at a cost of \$22,000. Among other public buildings are a fine court-house, three or four very neat little churches and the Territorial penitentiary—the latter, we are happy to say, not of necessity being very commodious, but first-class so far as it goes.

There are two good hotels, whose arrivals in 1878 footed up over 15,000, which would indicate a large travel to and through the town. The *New Northwest*, a large weekly newspaper, ably edited and published here by Capt. J. H. Mills, is one in which every Montanian takes a personal pride. The sales of stamps at the Deer Lodge postoffice aggregate nearly \$2,000 per year; letters mailed and received about 80,000 per year; money orders sold, \$30,000 per year. Some 500 different periodicals are regularly received, to say nothing of the tons of books and other printed matter which arrives annually. The daily stage and telegraph connect Deer Lodge with the railroad. Among other towns in the county are Butte, with 3,000 population; Philipsburg, 500; Pioneer, New Chicago, Blackfoot, Lincoln, McClellan and Silver Bow. Philipsburg boasts a \$2,000 school-house, and several fine mills and a silver cornet band.

Virginia City, the county seat of Madison county, and the commercial center of southern Montana, is located in Alder Gulch, 228 miles north of the Utah & Northern terminus. It contains a population of 1,000 inhabitants, and has telegraph and daily stages to different tributary points. The principal banking institution sold exchange to the amount of \$1,400,000 in 1878, bought \$400,000 worth of gold dust and bars, and had average deposits of \$100,000. Over \$75,000 were paid on Union Pacific Railroad freights here last summer. Post-office money orders were sold in 1878 to the amount of \$30,000. Virginia City is also noted for the value and excellence of its public improvements. It has a \$35,000 court-house, a \$30,000 Masonic temple, \$12,000 public school house,

good Episcopal, Methodist and Catholic churches. The moderate altitude—5,713 feet—and genial clime are proven by pretty flower, fruit and vegetable gardens which ornament some of the homes. Virginia has a good newspaper, the *Weekly Madisonian*.

Bozeman, the county seat of Gallatin county, is beautifully located near the base of Bridger Mountain, Gallatin Valley. The mountains, rising abruptly 4,000 feet above the valley, abound in wild and romantic gorges through which the clearest streams, carrying beauty and fertility to valley lands below, are always rushing. The place contains a population of 900. The broad, level streets are lined with good, substantial business blocks, while on outer avenues are found some of the most elegant and costly residences in the Territory. Bozeman boasts water-works, two good hotels, planing mill, flouring mill, an \$18,000 public school building, an \$8,000 church, as well as a less pretentious one. A Masonic hall, a court-house costing \$25,000 about to be built, a private banking institution, the *Avant Courier*, a live weekly newspaper, and a United States land office, are among other noteworthy institutions of this bright and flourishing town. Indicating the business done here, we may mention that the two principal hotels registered 14,000 guests in 1878, that nearly 2,000,000 pounds of merchandise were brought hither the same year, and that the money-order business of the postoffice foots up \$50,000 per year. Bozeman has telegraphic communication with the railroad, and daily stages to Helena, 110 miles distant, as well as to the railroad, via Virginia City, 330 miles distant. It is also a prominent outfitting point for Yellowstone Park, the nearest border of which is only 75 miles away. Among the many attractions near Bozeman is Mystic Lake, 14 miles; Lund's Hot Springs, 8; Rock Cañon, 5; Bridger Cañon, 3; Bear Cañon and Lakes, 6; Hunter's Hot Sulphur Springs on the Yellowstone, 47; Middle Creek Falls and Cañon, 15, and Mount Blackmore, 30 miles.

Missoula, county seat of Missoula county, prettily located in Missoula Valley, 300 miles northwest of the Utah & Northern terminus, population 800; Fort Benton, Montana's river metropolis, at the head of navigation on the Missouri, population 600; Miles City, on the Yellowstone, in eastern Montana, population 800; and Radersburg, Bannack, Gallatin, Glendale and Diamond City are among other towns which figure prominently in the Territory's history and present prosperity.

CHAPTER VII.

YELLOWSTONE NATIONAL PARK.

Now that iron rails and Pullman cars to the borders of our American wonderland—nay, the *world's* wonderland—are among the early possibilities, renewed attention is attracted to that enchanting corner of our domain. It is hard for any one who has not stood spell-bound in the presence of those almost supernatural wonders, the geysers, or paused enchanted at the heights overlooking Yellowstone Lake, to realize that here, within the bounds of a few ordinary townships, are attractions which are not duplicated in the known world; or that every variety of phenomenon here so vastly exceeds anything of its kind elsewhere that comparisons are almost ridiculous, and that the time is near at hand

when it will be the great central resort for the lovers of the grand, the beautiful and the sublime in nature from all parts of the inhabited universe.

Why, only think of it! the mammoth springs of Gardiner River, with their wonderful architectural beauty and the healing virtue of their waters, far out-rival any similar resorts in America or Europe. The lovely cascade of Tower Creek is not equaled by Minnehaha; while the Great Falls of the Yellowstone, with their symmetrical proportions, containing "all the elements of picturesque beauty," and so intimately connected with all the strangely-fascinating enchantments of the delicately-carved and gorgeously-crowned Grand Cañon, excel in sublimity the world-known Niagara, or the soul-inspiring Yosemite. As a friend, who is given to "cold figures" and poetry at the same time, says: "The height of Niagara Falls—164 feet—is 226 feet less than our beautiful falls of the National Park. The sheet at Niagara is 1,100 feet in breadth, while that of the Yellowstone is less than 200. The discordant roar of Niagara is liquid music at Yellowstone; the majesty of the former is poetry at the latter. The waters which dash over Niagara flow through a level and monotonous region, and have a weary, business-like appearance; while the Yellowstone, gliding through a region sublime in scenery and associations everywhere, falls into the grandest cañon of the world. The former are 300 feet above sea level, the latter 8,000! The great suspension bridge is but 258 feet above the water; a like bridge across this grand cañon would rise *two thousand feet* above the little stream." The view from Mount Washburn, or one of the glistening glaciers farther to the south, is equal to any of the Alpine views, which have inspired poets and stirred the souls of orators and artists in portraying their grandeur and beauty; while a visit to the charming solitudes along the pebbly strand of the crystal waters of Yellowstone Lake, with its emerald isles and weird surroundings, will cause every other like scene to fade into insignificance. Of this Hayden says: "Such a vision is worth a lifetime, and only one of such marvelous beauty will ever greet human eyes." With a shore line of 300 miles and an extent and depth sufficient to float the navies of the universe, its altitude is yet so great that if Mount Washington, the pride of all New England, should be placed at the foot of Yellowstone Lake, with its base at sea level, the sparkling waters of this mountain sea would roll *two thousand feet above its summit*.

Then what can we compare with the almost supernatural wonders of the Upper Geyser Basin, once the center of fierce volcanoes and powerful forces, where yet the earth is made to quake and tremble from the internal concussions and rumblings, as the stupendous volumes of steam and water are hurled upward from the superheated regions below. Rev. Edwin Stanley, a recent visitor, in summing this up in his well-written "Rambles in Wonderland," declares "that no such cluster of wonders is exhibited elsewhere in the world. Let us imagine ourselves for once standing in a central position, where we can see every geyser in the basin. It is an extra occasion, and they are all out on parade, and all playing at once. There is good Old Faithful, always ready for her part, doing her best—the two-by-five feet column playing to a height of 150 feet—perfect in all the elements of geyser-action. Yonder the Beehive is sending up its graceful column 200 feet heavenward, while the Giantess is just in the humor, and is making a gorgeous display of its, say, ten-feet volume to an altitude of 250 feet. In the meantime the old Castle answers the summons, and, putting on its strength with alarming detonations, is belching forth a

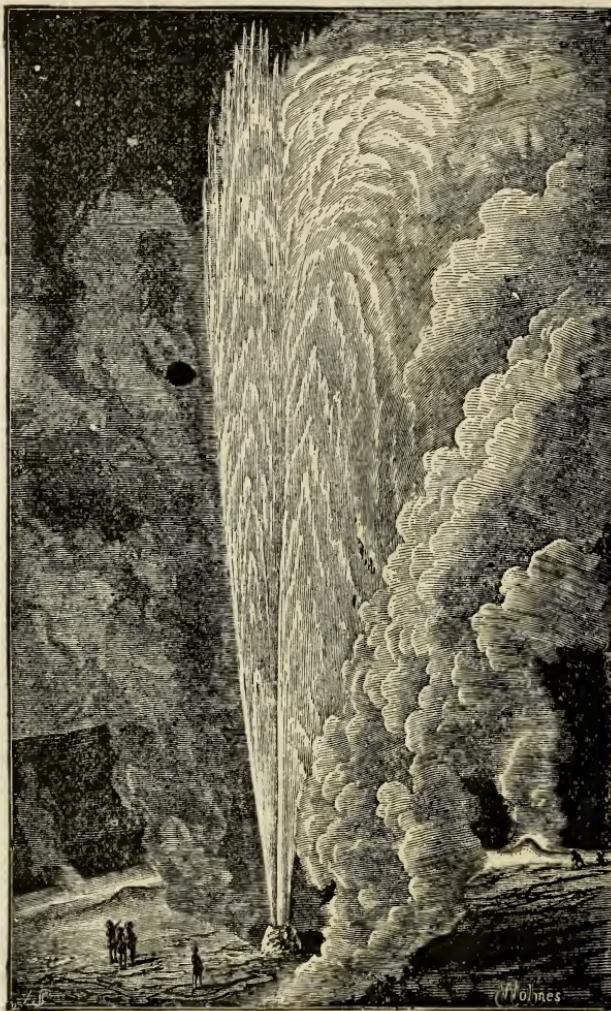
gigantic volume 70 feet above its crater; while over there, just above the saw-mill, which is rallying all its force to the exhibition, rustling about and spouting upward its six-inch jet with as much self-importance as if it were the only geyser in the basin, we see the Grand, by a more than ordinary effort, over-topping all the rest with its heaven-ascending, graceful volume, 300 feet in the air. Just below here the Riverside, the Comet, the complicated and fascinating Fantail, and the curiously-wrought Grotto, are all chiming in, and the grand old Giant, the chief of the basin, not to be left behind, or by any one outdone, is towering up with its six-feet fountain, swaying in the bright sunlight at an elevation of 250 feet. In the meantime a hundred others of lesser note, we will say, are answering the call at this grand exposition, and coming out in all their native glory and surpassing beauty. Just listen to the terrible, awful rumblings and deafening thunders, as if the very earth would be moved from its foundation—the thousand reports of rushing waters and hissing steam, while Pluto is mustering all his forces, and Hades would feign disgorged itself and submerge our world. But then look upward at the immense masses of rising steam ascending higher and still higher, until lost in the heavens above; while every column is tinselized over with a robe of silver decked with all the prismatic colors, and every majestic fountain is encircled with a halo of gorgeous hues."

"This whole region," says Dr. Hayden, the United States geologist, "was, in comparatively modern geological times, the scene of the most wonderful volcanic activity of any portion of our country. The hot springs and geysers represent the last stages—the vents or escape pipes—of these remarkable volcanic manifestations of the internal forces. All these springs are adorned with decorations more beautiful than human art ever conceived, and which have required thousands of years for the cunning hand of Nature to form." "It is probable," he remarks elsewhere, "that during the Pliocene period, the entire country, drained by the sources of the Yellowstone and the Colorado, was the scene of volcanic activity as great as that of any portion of the globe. It might be called one vast crater, made up of a thousand smaller volcanic vents and fissures, out of which the fluid interior of the earth, fragments of rock and volcanic dust, were poured in unlimited quantities. Hundreds of the nuclei or cones of these vents are now remaining, some of them rising to a height of 10,000 to 11,000 feet above the sea."

The Yellowstone Park embraces an area of fifty-five by sixty-five miles, and contains the most striking of all the mountains, gorges, falls, rivers and lakes in the whole Yellowstone region. The hot springs on Gardiner's River, for example, are along its northern boundary; the Grand Cañon lies toward its northeastern corner; toward its southeastern corner stretches Yellowstone Lake, and occupying the western central portion is the wonderful Geyserland.

The Geysers.—Entering the park by the Virginia City wagon-road, the visitor first encounters the geysers. These rival the most famous of Iceland, and deserve detailed description. The explorer, Lieutenant Barlow, tells us that near the edge of the basin, where the river makes a sharp bend to the southeast, is found the initial geyser—a small stream vent—on the right. Soon on either side of the river are seen the two lively geysers called the "Sentinels," because of their nearness to the gate of the great geyser basins. The one on the left is in constant agitation, the waters revolving horizontally with great

violence, and occasionally spouting upward to the height of 20 feet, the lateral direction being 50 feet. Enormous masses of steam are ejected. The crater of this is 3 feet by 10. The opposite sentinel is not so constantly active, and is smaller. About 250 yards from the gate are three geysers acting in concert. When in full action the display from these is very fine. The waters spread out



FAN GEYSER, YELLOWSTONE PARK.

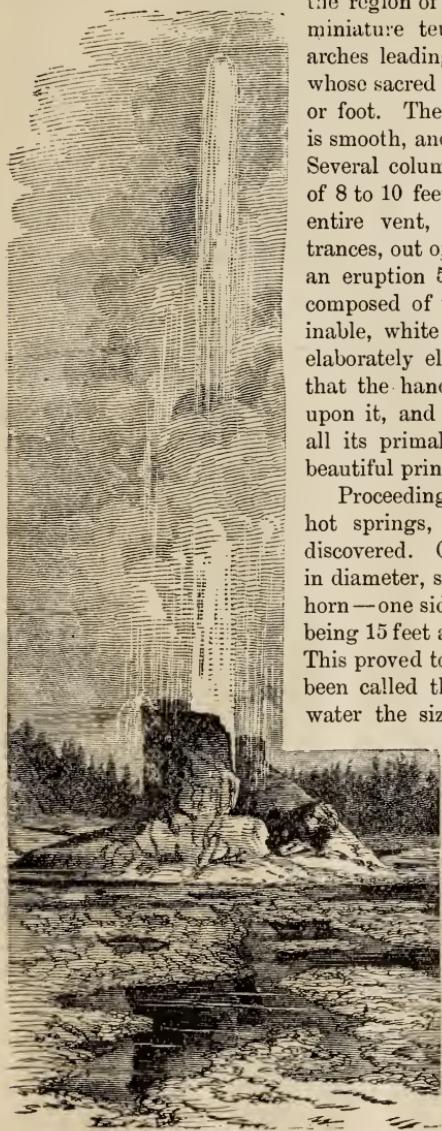
in the shape of a fan, in consequence of which they have been named the Fan Geysers. One hundred yards farther up the side of the stream is found a double geyser, a stream from one of its orifices playing to the height of 80 or 90 feet, emitting large volumes of steam. From the formation of its crater it was named the Well Geyser.

Still above are found some of the most interesting and beautiful geysers of the whole basin. First are two smaller geysers near a large spring of blue water, while a few yards beyond are seen the walls and arches of the Grotto. This is an exceedingly intricate formation 8 feet in height and 90 in circumference. It is by many called the gem of all the geysers. It is absolutely magnificent—a sight of resplendent beauty that greets the eyes nowhere outside of

the region of the National Park. It is simply a miniature temple of alabaster whiteness, with arches leading to some interior Holy of Holies, whose sacred places may never be profaned by eye or foot. The hard calcareous formation about it is smooth, and bright as a clean swept pavement. Several columns of purest white rise to a height of 8 to 10 feet, supporting a roof that covers the entire vent, forming fantastic arches and entrances, out of which the water is ejected during an eruption 50 or 60 feet. The entire surface is composed of the most delicate bead-work imaginable, white as the driven snow, massive but elaborately elegant, and so peerlessly beautiful that the hand of desecration has not been laid upon it, and it stands without flaw or break in all its primal beauty—a grotto of pearls, “the beautiful princess of all the realm.”

Proceeding 150 yards farther, and passing two hot springs, a remarkable group of geysers is discovered. One of these has a huge crater 5 feet in diameter, shaped something like the base of a horn—one side broken down—the highest point being 15 feet above the mound on which it stands. This proved to be a tremendous geyser, which has been called the Giant. It throws a column of water the size of the opening to the measured altitude of 130 feet, and continues the display for an hour and a half. The amount of water discharged is immense, almost equal in quantity to that in the river, the volume of which during the eruption is doubled. But one eruption of this geyser was observed. Another large crater close by has several orifices, and with ten small jets surrounding it, formed probably one connecting system. The hill built up by this group covers an acre of ground, and is 30 feet in height.

Harry J. Norton, Esq., formerly of Virginia City, made the rounds

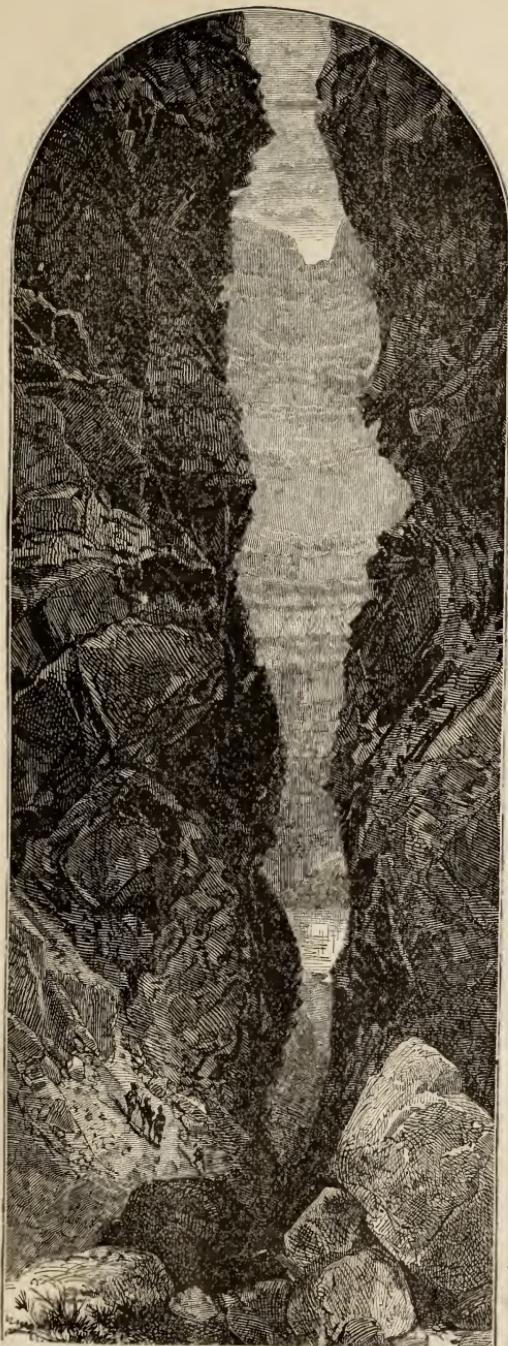


GIANT GEYSER, YELLOWSTONE PARK.

of all the geysers, and describes the leading ones as follows: "In our opinion, there is no geyser in the entire region that is so richly deserving of mention as our ancient-looking, steadfast friend, Old Faithful; for its operations are as regular as clock-work, of most frequent occurrence, and of great power. Standing sentinel-like on the upper outskirts of the valley, at regular intervals of 67 moments, the grim old vidette sounds forth his 'all's well' in a column of water five or six feet in diameter, throwing it skyward to a distance of 150 feet, and holding it up to that height for eight or ten minutes' duration. The stream is nearly vertical, and in descending the water forms a glittering shower of pearl-drops, plashing into a succession of porcelain-lined reservoirs of every conceivable shape and many-colored tints. The mound is not far from 20 feet in height, and gradually slopes down to the south in regular terraces to a neighboring hot spring. One of the artistic reservoirs nearest the crater is half filled with irregularly shaped, perfectly polished white pebbles, which must have been thrown out at the different eruptions. When the eruption ceases the water recedes, and nothing is heard but the occasional escape of steam until another exhibition occurs. Old Faithful will ever be the favorite of tourists, as it never fails in regularly giving a display of its powers.

"Crossing the river, and proceeding down its east bank an eighth of a mile, is the Beehive. In the middle of the afternoon an eruption took place without a moment's warning. The column of water ejected filled the full size of the crater, and was shot up fully 200 feet. So nearly vertical does the stream ascend that on a calm day nine-tenths of the volume would fall directly back into the aperture. From this cause, probably, there is no mound of any consequence built around it. At the time we witnessed its action, the ascending torrent was interposed between us and a bright, shining sun, and through its cloud of spray there formed a rainbow of magnificent proportions, lending the fountain a crowning splendor and glory that it could not otherwise possess.

"To the right, and down stream a few hundred yards from the Beehive, is the Giantess, with a crater 18 by 25 feet. We came upon it during one of its lucid intervals, and looking down into the gaping chasm could just discern the water a great distance below, as in a state of apparent tranquillity. Presently, however, there came up from its gloomy depths a dismal groan, quickly followed by a dense volume of steam and a rumbling sound beneath our feet, as of terrific underground thunder. In a moment more the seething elements below were in wildest commotion. The rolling and clashing of waves, the dread, terrible steam-clouds to and fro under the frail crust, the thunder of the raging waters as, lashed into fury by the pursuing steam, they sought to burst apart their prison wall and escape,—all were but too distinctly heard and felt. Spell-bound we stood, and with enraptured awe silently awaited the result of this terrible confusion. Spasm succeeded spasm; the agitated flood boiled up to the surface of the crater, and with a deafening report the immense body of water was hurled into the air over a hundred feet. Like some gigantic fountain impelled by an engine power that could have revolved a world, the boiling jet continued to play for several minutes. Surrounding this majestic liquid dome is a circle of smaller jets issuing from the same crater, but from lesser apertures below, giving the main column the appearance of a fountain within a fountain. Playing hither and thither in the mellow sun-lit mist, miniature rainbows were seen, and the air glistened with the falling water-beads as if a



SIDE CAÑON OF THE COLORADO.

REACHED VIA THE UNION PACIFIC AND UTAH &
NORTHERN RAILROADS.

shower of diamonds were being poured from the golden gates of the Eternal City.

“Suddenly, just below us on the opposite bank of the river, a vast column of steam burst forth and ascended several hundred feet. On the *qui vive* for new wonders, we hurried over a slight knoll in that direction, and arrived just in time to witness the Fan Geyser getting up steam for an eruption. It requires more inside machinery to operate this geyser than any of the others. In fact, it is a massive natural engine, 25 by 100 feet, with two small valves, two escape pipes, and at the extreme upper end a large smoke-stack—five separate and distinct craters. When we arrived, we could hear a sound as of cord-wood being thrown into a mammoth furnace. This continued several seconds, ceased, and was followed by great quantities of steam from the smoke-stack; then the two valves opened, shooting out swift, hissing jets of steam. The next moment there would be an unearthly roar from the double crater; both would fill, and from each aperture a column of water two feet in diameter shot upward over 80 feet, one ascending nearly vertical and the other at an angle of about 45 degrees, thus forming the ‘fan.’ The eruption would continue from two to four minutes, then the flow cease for eight or ten seconds, and then the entire movement would be repeated. These repetitions continued for about twenty-five minutes, then ceased altogether. It requires no great flight of fancy to see in this marvelous natural mechanism a vast engine running under the guidance of a ghostly engineer, and being ‘stoked’ from Pluto’s wood-pile by a thousand goblin firemen.”

The Hot Springs.—Wonderful hot springs burst out at many different points in the Park, but those in the northern portion are most generally admired. The springs in active operation on Gardiner’s River cover an area of about one square mile, and three or four square miles thereabouts are occupied by the remains of springs which have ceased to flow. Small streams flow down the sides of the Snowy Mountain in channels lined with oxide of iron of the most delicate tints of red; others show exquisite shades of yellow, from a deep, bright sulphur to a dainty cream color; still others are stained with shades of green—all these colors as “brilliant as the brightest aniline dyes,” declares one observer. The water, after rising from the spring basin, flows down the sides of the declivity, step by step, from one reservoir to another, at each one of them losing a portion of its heat, until it becomes as cool as spring water. The natural basins into which these springs flow are from four to six feet in diameter, and from one to four feet in depth. The principal ones are located upon terraces midway up the sides of the mountain. “The largest living spring is near the outer margin of the main terrace. Its dimensions are 20 feet by 40, and its water so perfectly transparent that one can look down into the beautiful ultramarine depth to the very bottom of the basin. Its sides are ornamented with coral-like forms of a great variety of shades, from a pure white to a bright cream-yellow, while the blue sky reflected in the transparent water gives an azure tint to the whole which surpasses all art.”

Of the springs at the southwestern edge of the lake, Professor Hayden says: “Our second camp was pitched at the Hot Springs, on the southwest arm. This position commanded one of the finest views of the lake and its surroundings. While the air was still, scarcely a ripple could be seen on the surface, and the varied hues, from the most vivid green shading to ultramarine, presented a picture

that would have stirred the enthusiasm of the most fastidious artist. Sometimes, in the latter portion of the day, a strong wind would arise, arousing this calm surface into waves like the sea. Near our camp there is a thick deposit of silica, which has been worn by the waves into a bluff wall, twenty-five feet high above the water. It must have originally extended far out into the lake. The belt of springs at this place is about three miles long and half a mile wide. The deposit now can be seen far out in the deeper portions of the lake, and the bubbles that rise to the surface in various places indicate the presence, at the orifice, of a hot spring beneath. Some of the funnel-shaped craters extend out so far into the lake that the members of our party stood upon the silicious mound, extended the rod into the deeper waters, and caught the trout, and cooked them in the boiling spring, without removing them from the hook. These orifices, or chimneys, have no connection with the waters of the lake. The hot fumes coming up through fissures, extending down toward the interior of the earth, are confined within the walls of the orifice, which are mostly circular and beautifully lined with delicate porcelain."

Yellowstone Lake.—But the brightest jewel of our wonderful park—Yellowstone Lake—must no longer pass unnoticed. It is about 20 miles long and 15 miles broad, with a rough and irregular, but almost enchanting shore line. Its superficial area is about 300 square miles, its greatest depth 300 feet, and its elevation above the sea 7,427 feet. Lying upon the very crown of the continent, Yellowstone Lake receives no tributaries of any considerable size, its clear, cold water coming solely from the snows that fall on the lofty mountain ranges that hem it in on every side. "In the early part of the day, when the air is still and the bright sunshine falls on its unruffled surface, its bright green color, shading to a delicate ultramarine, commands the admiration of every beholder. Later in the day, when the mountain winds come down from their icy heights, it puts on an aspect more in accordance with the fierce wilderness around it. Its shores are paved with volcanic rocks, sometimes in masses, sometimes broken and worn into pebbles of trachyte, obsidian, chalcedony, cornelians, agates, and bits of agatized wood; and again, ground to obsidian sand sprinkled with crystals of California diamonds." Of this the enthusiastic Langford says: "Secluded amid the loftiest peaks of the Rocky Mountains, possessing strange peculiarities of form and beauty, this watery solitude is one of the most attractive objects in the world. Its southern shore, indented with long narrow inlets, not unlike the frequent fiords of Iceland, bears testimony to the awful upheaval and tremendous force of the elements which resulted in its erection. The long pine-crowned promontories, stretching into it from the base of the hills, lend new and charming features to an aquatic scene full of novelty and splendor. Islands of emerald hue dot its surface, and a margin of sparkling sand forms its setting. The winds, compressed in their passage through the mountain gorges, lash it into a sea as terrible as the fretted ocean, covering it with foam. But now it lay before us calm and unruffled, save as the gentle wavelets broke in murmurs along the shore. Water, one of the grandest elements of scenery, never seemed so beautiful before."

Besides its entrancing shore line the lake is dotted with numerous islands, which lend rare beauty by their luxuriant vegetation. Fish abound in the lake, game of all kinds inhabit the surrounding forests, and the placid surface of the water and grassy margins render this mountain-locked sheet the earthly para-

dise for myriads of water-fowl. There are facilities for boating here, and rather primitive summer accommodations for the tourist.

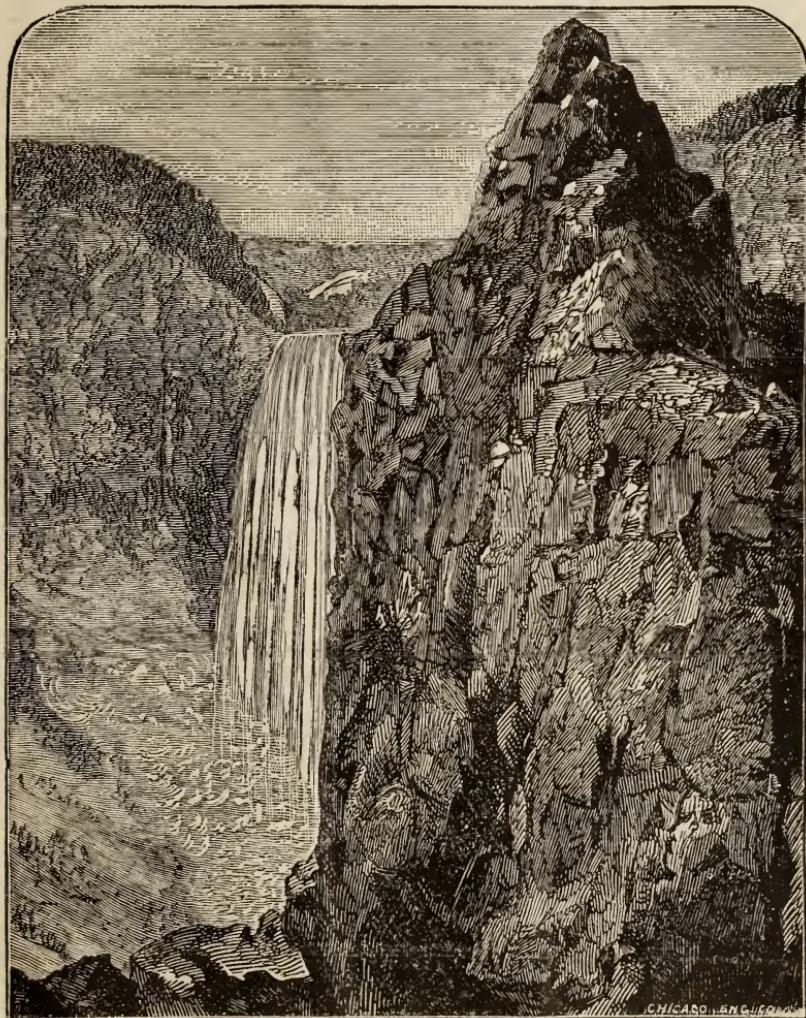
The Grand Cañon and Falls of the Yellowstone.—It is but a pleasant two-hours' ride from the lake to the falls. The head of Yellowstone Cañon is but a short distance above the Upper Falls, and just before reaching them narrows down to a close gorge, compressing the water into so small a passage-way that they drive through with great commotion. The first fall is only a quarter to a half mile above the lower one, and the stream dashes over a perpendicular cliff 140 feet high. Our nearest view of the Upper Falls, says an eloquent visitor, “was from the craggy summit of a projecting point of the mountain which forms a portion of the cañon wall a half mile below. The view is one which, were there no Lower Falls to admire, would be a sufficient attraction to call forth abundant enthusiasm from the looker-on. But as one stands gazing at them from the rocky height, a mighty and continuous roaring of all the fleeing tide can be heard directly beneath, challenging the individual attention and admiration of the wonder-seeker.

“The river between these two great precipices is dashed into a turbulent, foamy cascade, by its ragged bed and lightning speed, and does not again become smooth until just the instant it takes its dizzying leap of *three hundred and ninety feet* perpendicularly to its narrow bed in the depths of the great cañon. On either side of the falls, and so far as the eye can reach below, there rises to a height of two thousand feet above the river, a grand, vast wall of infinite masonry, so gorgeously colored and tinted, so bounteously beautified in gilt, purple and carmine, that no oil-painting, however fine, will ever do justice to the natural picture! There is no painful glare of one color prominent over another; the great Artist has used each brush deftly, and with his divinely exquisite touches each tint and shade is so perfectly blended that the mighty walls seem as if built by the equal commingling of all the precious metals of the world!”

The view of the Grand Cañon from the heights above, is pronounced by a widely known traveler “the finest piece of scenery in the known world,” and indeed it is hard to conceive of any combination of pictorial splendors which could unite more potently the two requisites of majesty and beauty. The Grand Cañon is not all poetry, however, as those who have descended into it have discovered. It contains a great multitude of hot springs of sulphur, sulphate of copper, alum, etc., and the river, when it is finally reached, after four miles of wearisome clambering, is warm and impregnated with a villainous taste of alum and sulphur. Its margin is lined with various chemical springs, some depositing craters of calcareous rock, others muddy waters of different colors. The explorers have been unfortunate in selecting their point of descent, which has been at the northern end of the chasm, for at the southern end nothing but magnificence is apparent.

Where Tower Creek ends the Grand Cañon begins. Twenty miles in length, it is impassable throughout, and inaccessible at the water's edge, except at a few points. Its rugged edges are from two hundred to five hundred yards apart, and its depth is so profound that no sound ever reaches the ear from the bottom. “The stillness is horrible. Down, down, down, we see the river attenuated to a thread, tossing its miniature waves, and dashing, with puny strength, against the massive walls which imprison it. All access to its margin is denied, and

the dark, gray rocks hold it in dismal shadow. Even the voice of its waters in their convulsive agony cannot be heard. Uncheered by plant or shrub, obstructed with massive boulders, and by jutting points, it rushes madly on its solitary course. The solemn grandeur of the scene surpasses description. The sense of danger with which it impresses you is harrowing in the extreme."



GREAT FALLS OF THE YELLOWSTONE.

CHICAGO ENGRAVING

Other attractions.—Lest readers may from the foregoing obtain the impression that there is little of interest in this region except the phenomenal, I quote the following from Mr. William I. Marshall, a gentleman who has repeatedly visited it. "Perhaps I was not careful enough to guard my hearers against the impression that there is little of interest in that extraordinary portion of our

country except the phenomenal. Few, I suppose, would care to live long among spouting geysers and boiling springs, or even upon the banks of the brilliantly-colored Grand Cañon of the Yellowstone ; but these cover only a small part, probably not more than two or three per cent of the surface of the Park, which embraces 3,578 square miles, or 2,298,920 acres, an area almost one-half as large as the state of Massachusetts, and, of course, extensive enough to contain an immense variety of scenery. There are scores of miles of beautiful valleys traversed by rivers of the purest water, swarming with trout, grayling and whitefish, and furnishing the finest hunting-grounds for ducks, geese, swans, and other water-fowl. These valleys are generally covered with fine grass, on which numerous antelopes pasture, while the greater part of the mountains which bound them is covered with the forests (interspersed with those great grassy slopes which are so marked a feature of the timbered areas of the Rocky Mountains) in which those fond of rifle shooting can find elk and black-tailed deer and white-tailed deer and mountain sheep, and occasionally a band of mountain buffalo and other large game. There are countless quiet nooks where one can camp under the fragrant pines, besides green meadows gemmed with lovely wild flowers, and watered by bubbling brooks across which the beaver still builds his cunning dam, and beneath whose banks and in whose deep pools the dainty little speckled brook-trout watches for his prey. Not only are there scores of grand mountains lifting their craggy sides and rugged summits (few of which have ever felt the tread of civilized man) far up among the clouds, but innumerable sunny glades and shady dells, charming bits of quiet, picturesque scenery, where one will see nothing of the striking, but only the gently beautiful.

"I presume the headquarters for tourists, when the park shall be made a little more accessible, will be established on the shores of the lovely Yellowstone lake, which, lying at an altitude of 7,778 feet above the sea, or 1,500 higher than the summit of Mount Washington, in New Hampshire, covers 300 square miles with cool, clear water, which in places is 300 feet deep, and rolls its waves, of as deep a blue as the open sea, on 175 miles of shore line, now of loveliest beauty, and now of wildest grandeur. With its opportunities for rowing and sailing and fishing and hunting, with the grandest of mountains bordering it and the purest of air ever sweeping over it, and with the inducements to open-air life offered by its surroundings, it is surely destined to become a most delightful summer resort for those who love nature, and who, when they wish to see her strangest and most wonderful phases, can sail or ride in a few hours to the spouting geysers, the boiling springs, the stifling solfataras, the roaring mud volcanoes, the lofty cataracts, and the gorgeous cañon of the Yellowstone; and when they would enjoy her quieter and more subdued aspects can find them on every hand in endless profusion. Those who travel to see the triumphs of industry and the treasures of art, to behold the ruins of an ancient era or splendor of modern cities; those who wish to revive historical associations or to survey the beauty of the earth as affected by human effort and connected with human life, will, of course, go to the Old World; but there are many, and the number seems to be constantly increasing, who, for a longer or shorter time, love yearly to leave behind them the bustle of towns and the roar of cities, the vexations of business and the conventionalities of society, and live face to face with nature, resting in her solitudes or communing with her ceaseless health-giving activities, and to

these the endless features of the park will offer varied attractions and constant charms."

Routes and Distances.—The Utah & Northern Railroad is advancing so rapidly in its northward march from the Union Pacific at Ogden, that it will without doubt, during the coming summer, reach a point not more than 85 miles from the Geysers. First-class stage lines will at once be organized, and so efficiently operated that the tourist can step from his car in the morning and take trout and tea in sight of "Old Faithful" or the "Grotto" at sunset. During the past summer carriage roads have been constructed so that the visitor can easily drive from end to end of the Park in two days, taking in attractions at every step. Trails or bridle-paths radiate in every direction from Yellowstone lake, and that intending visitors may obtain an idea of the points which are easily reached within a day, or two days at most, from that central locality, we append the following table of distances. It has been compiled within the past few months by competent authority:

YELLOWSTONE LAKE TO—	MILES.
Steamboat Springs	8
Yellowstone Falls and Cañon	20
Mud Volcano and Springs	8
Madison Falls	48
Sulphur Mountain	11
Geysers on Gibbon's Fork	35
Specimen Creek	40
Mount Washburne	28
Upper Geyser Basin	30
Lower Geyser Basin	35
Tower Falls	40
Mammoth Springs on Gardiner's River	60
Agnes Lake	45
East Geyser Basin	25
Fairy Falls	45
Heart Lake	20
Petrified Forest	35
Falls of Gardiner's River	58
Anna Lake	45
Lake Abundance	60

Virginia City is at present as good as any of the Montana cities as an outfitting point, and until a wagon road shall have been constructed direct from the Utah & Northern terminus into the Park, will remain the only gateway for travel from the south. Ponies, wagons, guides, and all paraphernalia necessary to the thorough enjoyment of a trip to the "American wonderland," can be procured as cheaply here as at other Rocky Mountain cities, adding cost on freight of provisions brought from the railway. The route via Virginia is, in itself, one of the most romantic pieces of roadway in all the western country, and is lined with good ranches or camping places all the way. At Sawtelle's, Henry's lake, a week can be profitably spent, for scenery, fish and game are all at hand to invite; and "mine host" Sawtelle is a royal entertainer. Following are distances by the Virginia route:

VIRGINIA CITY TO—	MILES.
Madison River	14
Driftwood, or Big Bend of Madison	28
Henry's Lake	18
Gibbon's Fork	26
Upper Geyser Basin	15
Yellowstone Lake	14—115

APPENDIX TO THE SECOND EDITION.

LEADVILLE.

A BRIEF RESUME OF COLORADO'S BONANZA.

Glancing at any reliable map of the West, you will see located in Lake County, Colorado, 110 miles south-west of Denver, the name Oro. Leadville, not yet honored with a place in our atlases, is only three miles distant, and, until the maps are again revised, modest little Oro must serve as a sort of guide-board for its far more pretentious neighbor. Leadville's altitude is about 10,200 feet above the sea, and it is not on top of the mountains, or a forbidding spot, by any means. A year ago the grandest of forests covered the site, which is on a pretty slope leading down from higher ranges to picturesque California Gulch. The view from any of the higher streets takes in hundreds of miles of lofty mountains which encircle South and Middle Parks.

Gulch mines were first discovered in California Gulch, near where Leadville now stands, in 1865, and soon attracted a population of at least 10,000. From \$4,000,000 to \$6,000,000 in gold were taken from gravel deposits; but with the exhaustion of placers the inhabitants drifted elsewhere. Miners in that early day found the carbonates that have since proven so rich in silver, but, deeming them of no value, cast them aside, and many were the imprecations heaped upon the heavy sand that filled the sluice-boxes. In the summer of 1874, for the first time, it was thought that this heavy sand contained precious metals. Assays proved that it not only contained silver, but was immensely rich. People were slow to believe statements made in regard to it, and declared samples of the ore a fraud. Although richer mines were found in 1876 and 1877, it was not until the spring of 1878 that any considerable excitement was manifest. Since that time there has been a constant stream of immigration pouring in, and Leadville, to-day, is indisputably the mineral prodigy and wonder of the world. Nothing in mining history furnishes a parallel to this last marvelous development in the great carbonate fields of Colorado. The few hundred who found the camp in January, 1878, became a few thousand before spring was fairly under way. The city was organized and officials elected; newspapers established—three dailies; banks opened; churches and schools built; hotels erected; telegraph communication established; water works commenced; gas companies incorporated; street railway begun; and, in short, the mining camp had blossomed forth into a lively city of 20,000 inhabitants.

“What are all these people to do, and what will be the result of this wonderful activity?” asks the intelligent reader and disinterested authority answers: “Why the State of Colorado has not yet been ‘prospected’ at all, compared with the resources which invite the pick, and shovel, and brawn of the ‘honest miner.’” The surface of the ground only, so to speak, has been turned, and the developments of the past year show plainly that the wealth untouched so far exceeds that which has been brought to the surface as the giant mountain rivals the Iliupitan hill. Necessity must force these men who have the past few months flocked into Leadville, providing nothing else will, to get out of the town and into the hills just as soon as the snow melts sufficiently to admit of prospecting. Their substance is nearly, if not quite, gone, and they must shoulder their picks and shovels and go out to delve into the mountain sides. The country is vast; the mineral deposits numerous. They only await the labor which is now here to prove that Colorado is the richest mineral State in the Union. Down on the Gunnison new discoveries have been made; Tin-Cup Creek will be a favorite resort; Taylor Creek will secure many prospectors; the Elk Mountains will be alive with miners; the Uncompaghre Range teems with this new life. The San Juan, unquestionably one of the richest sections of the State, will receive a fresh impetus, and railroads through the South Park and new wagon thoroughfares will bring here valuable ores nearer a market.

THE MINES.

Mines have been located by the thousand, and nearly 100 are now paying large dividends. The yield of mines in this vicinity for the past three years—\$90,000 in 1876, \$595,300 in 1877, and \$2,818,000 in 1878—will give readers an idea of the rapidity of development in this industry. Leadville's production of silver for 1879, estimating from the present daily yield, will, it is believed, exceed \$12,000,000—more than that of all Colorado in 1878. Nearly 1,000 tons of ore,

averaging \$75 in silver per ton, are now being raised daily. The produce, during April, 1879, was placed by good authority at \$60,000 per day or \$1,800,000 per month. The "silver kings" of Nevada have offered \$5,000,000 for the "Little Pittsburgh," a Leadville mine which is declaring net dividends of \$300,000 per month, in the first stages of development, while Stevens & Leiter, of Chicago, the owners of the "Iron Mine," have refused \$5,000,000 for their "find." The "Vulture," worked by only four men, yielded \$58,000 during March, 1879. Governor Tabor, of Colorado, and others, from investments of a few hundred dollars at Leadville a year ago, are millionaires to-day, with an income of \$2,000 per day each.

The ores, carrying silver, lead and a small percentage of gold are usually found at depths varying from 25 to 100 feet, in pockets or horizontal beds, these beds being from four to fifty feet thick and yielding carbonates worth from \$50 to \$500 per ton. Ore has been taken from these mines yielding \$3 in silver to the pound, a single wagon load bringing as high as \$6,000. The nearness of these ores to the surface and their soft, earthly nature, has in a great degree done away with the necessity of blasting or the use of expensive hoisting works. The poor miner, with pick, shovel and windlass, has thus in many instances carved out a fortune as easily as the earliest gold-diggers were wont to in the richest gulches of Colorado and California. A noteworthy fact in connection with these discoveries is that almost every great "strike"—and there have been many which have netted their owners from \$50,000 to \$500,000 within a few weeks from the date of discovery—has been made by very poor men. Among these parties who were penniless a few months ago, not a few were "tender feet"—fresh arrivals from the east. The present rate of yield justifies an estimate of \$20,000,000 as the out put of Leadville mines in 1879, but more conservative experts place the figures at from \$10,000,000 to \$12,000,000. Eight or ten smelters are engaged in reducing the ore.

The following list includes what are generally conceded to be the best paying mines in Leadville, together with the *average value* of the ore per ton, as taken from the books of the different smelting works:

Ounces.	Ounces.	Ounces.	Ounces.
Iron	200	Camp Bird.....	150
Dyer.....	250	Vulture	100
Long & Derry	175	Silver Wave.....	100
New Discovery	160	Morning Star.....	90
Little Chief.....	120	Cyclops	80
Carbonate	175	Double Decker	75
Crescent	140	Evening Star.....	75
Carboniferous.....	100	Gone Abroad.....	80
Crysolite.....	100	Pittsburgh.....	60
		Little Giant	70
		North Star.....	70
		Agassiz	75
		Adelaide	80
		Henrietta	50
		Shaunrock.....	70
		Yankee Doodle	75
		Catalpa	75
		Kit Carson.....	60
		Little Eva	60
		Eaton, small claim	125
		Amie	80
		Climax.....	90
		Duncan	75
		Winnemuc.....	100
		Robert Emmet....	75
		Pine	50
		Tiger	70

The *Carbonate Belt* seems to cover an area of some 300 square miles, so far as yet defined, and new discoveries are chronicled almost every day in Ten Mile District, 20 miles from Leadville, as well as within the limits above mentioned.

Concerning the permanence of these great deposits, there is yet much difference of opinion. But one fact is assured. A number of the best mines have been so thoroughly prospected that they are known to have "millions in sight." Among these are the Little Pittsburgh, which sold for some \$300,000; the Iron, for \$250,000; the New Discovery, for \$162,000; the Little Chief; and others. Experts claim that in the belt of ground extending from the west line of the Vulture to the east line of the Winnemuc, which includes the Vulture, New Discovery, Little Pittsburgh, Little Chief, and Winnemuc Mines, it would be a safe estimate to say there is fully \$25,000,000 worth of exposed ore, and this is a mere patch of Leadville. Vulture, Kit Carson, Triangle, Carboniferous, and several others, are underlaid by hundreds of acres of a body of ore and dirt from one to 40 feet in thickness, which yields from \$100 to \$150 per ton, and there are hundreds of other mines and claims which are paying handsomely, or have good showings for the future.

Items of Trade.—The business and bustle of this mining metropolis is beyond all comprehension. From daylight to dark, and far into the late hours of the night, all is activity and business confusion. The streets are crowded with pedestrians and teams for at least 16 out of the 24 hours of the day. Chestnut Street resembles the busiest street in the busiest city in the world. It is difficult to make one's way along this street, on the side-walk, at any time between the hours of 9 a. m. and 12 midnight. The throng is simply immense, and every day seems to increase it. Many of the leading houses do a business every day of which the best houses in Denver might well be proud. There are four banks which, combined, sell exchange to the amount of \$400,000 monthly. The 15 markets dispose of \$100,000 worth of meats and provisions monthly. Over 15,000,000 feet of lumber were manufactured in the heavy forests adjoining the

45 mills now in operation in the vicinity will probably double the product in 1879. The telegraph office takes in \$3,000 monthly; and 1,300 wagons, each drawn by from four to eight head of horses or mules, are busy hauling supplies from the railroad and ore back. It is estimated that, with no increase of population, the sales of merchandise will aggregate \$5,000,000 this year.

Real Estate and Rents.—The appreciation in value of Leadville real estate is almost beyond belief and rents of business houses are simply fabulous. Fortunes are made daily in lot speculations. The land on Chestnut street (the principal thoroughfare) was bought from the Government a year ago at \$2.50 per acre. A few weeks ago a gentleman bought 75 feet front of it for \$10,000 and the next day sold 50 feet of it for the same amount. The Grand Hotel, built on the same street last fall at a cost of \$8,000, was sold in a few months for \$14,000, and to-day the same property can not be bought for \$40,000. Nine lots were lately sold in the suburbs for \$1,500. Within twenty-four hours the party who bought them was offered \$3,000 for his bargain. Lots on Chestnut and Harrison streets which sold a year ago at \$1 per foot front are now eagerly taken at \$150 to \$200 per foot.

The Theatre Comique, a one-story frame shell 50x100, rents for the enormous sum of \$1,700 per month, or over \$20,000 per year, and the receipts here run up to \$1,200 per night. A log house opposite, 25x50 feet, rents for \$700 per month. The City Hall Building on Chestnut street, by no means an extensive or ornate affair, rents for \$7,200 per annum.

EXPENSES OF LIVING, WAGES, SOCIETY, CHURCHES, ETC.

The rapid extension of railways and the improvement of wagon roads will reduce prices quoted below to quite an extent by autumn, '79.—Flour is from \$5 to \$6 per cwt.; potatoes 5 cents per pound; butter 40 cents; eggs 25 cents per dozen; sugar (white) 15 cents per pound; hams 15 cents; bacon 14 cents; fresh meats from 13 to 25 cents; coal oil 70 cents per gallon; syrup \$1.50 per gallon; lard 15 cents per pound; fresh milk 20 cents per quart; wood from \$4 to \$6 per load; hay from 5 to 6 cents per pound; oats 6; feed 6; native lumber \$40 per thousand; shingles from \$6 to \$8 per thousand; brick \$40 per thousand; lime 75 cents per bushel; furnished single rooms \$5 to \$8 per week; board \$7 to \$10. Miners report that they "bach" in a cabin for \$4 per week and live well. Washing \$2 per dozen—(no Chinamen here); doctor's visits, \$3; saddle horses, per day, \$3.50; freights from railroad terminus 3 to 5 cents per pound; insurance is 10 per cent. First class hotels of which the Clarendon is probably the very best, charge from \$3 to \$4 per day transient custom, or from \$15 to \$25 per week for permanent boarders. It is difficult to rent dwellings, and small ones of four or five rooms command from \$40 to \$75 per month. Clothing is from 25 to 40 per cent higher than at Chicago or St. Louis.

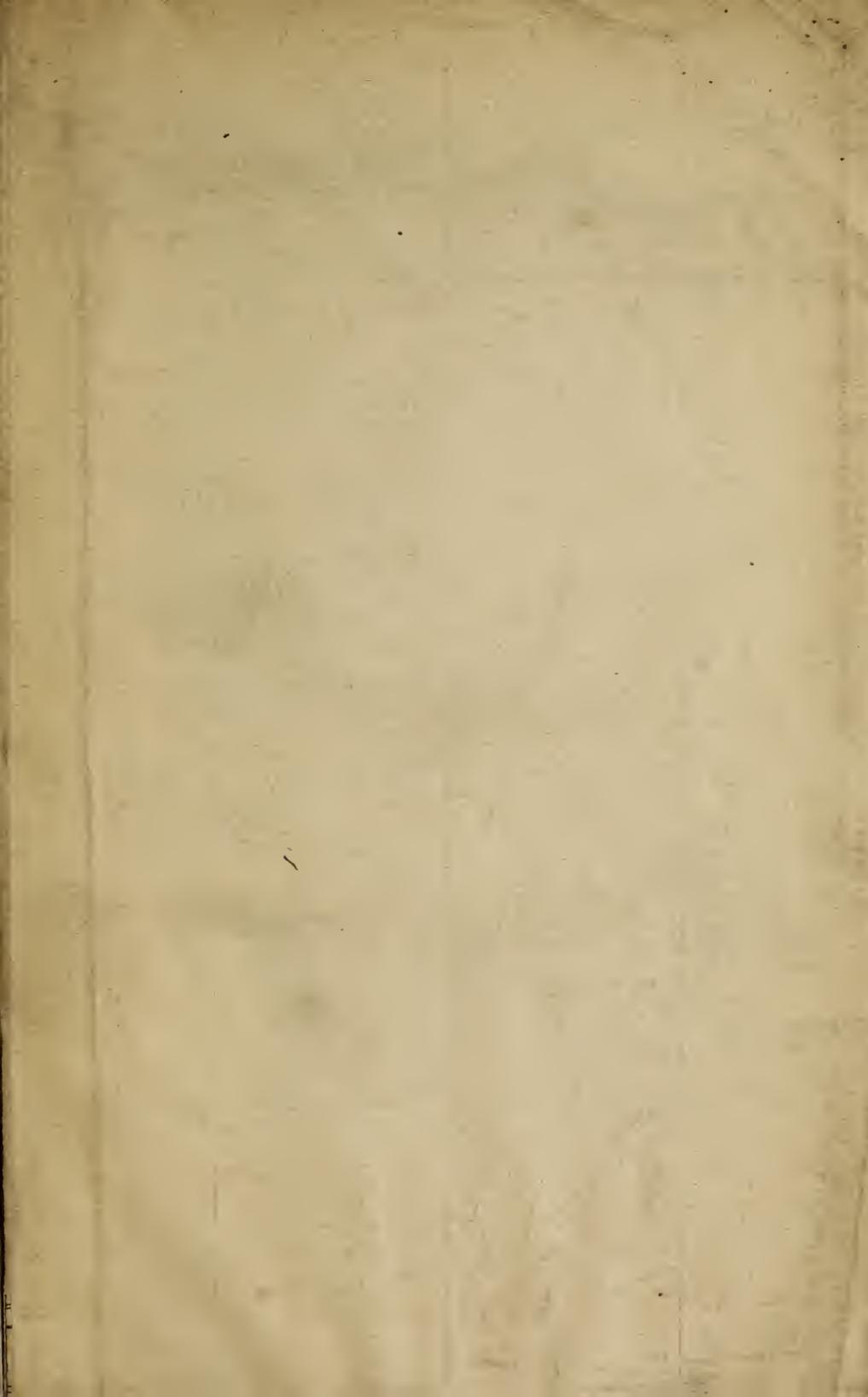
Employment and Wages.—Willing men have thus far easily found employment at Leadville. Miners get \$3 to \$4.50 per day carpenters, masons and blacksmiths, from \$4 to \$5; wood-choppers, \$3; laborers, \$2.50 to \$3; barkeepers, \$25 per week; waiters, \$10 to \$12, with board; clerks in stores and banks, \$60 to \$200 per month; female domestics, \$30 to \$50. Street teams are paid \$9 per day. At hauling ore teamsters load fully 4,000 pounds per trip, and their contracts are so made as to give them \$9 to \$10 daily gross earnings. Foremen at mines get from \$100 to \$125 per month. Wages at the furnaces are as follows: Furnace men (keepers) \$3.50; chargers, \$3 to \$3.50; suppliers and helpers, \$3. The veins already opened, while yielding fortunes to their owners, afford employment to large numbers of men.

Societies, Churches, and Schools.—Considering Leadville's heterogenous population, the good order that prevails is especially noteworthy. The city contains many ladies of cultivation and refinement. Five church organizations exist, viz: Baptist, Episcopal, Catholic, Methodist, and Presbyterian; the latter three have each a church. The public school building measures 30 x 50 feet, and is, of course, like everything at Leadville, "jam full." A private school is starting. The Young Men's Christian Association has an organization. The Masons and Odd-Fellows have each a lodge. There are two circulating libraries.

ROUTES, RATES, DISTANCES, ETC.

As a new stage road from Georgetown is now opened to Leadville, the Union Pacific Railroad offers its travel the choice of two routes: First, from Omaha to Georgetown by rail, time 36 hours, thence to Leadville by stage, distance 54 miles, time 10 hours; Second, from Omaha to Denver, and thence to Como, the terminus of the Denver, South Park & Pacific, by rail, time 40 hours, thence to Leadville, 50 miles by stage, time 12 hours. Fares from Omaha are: First class, \$41; emigrant, \$34. The Georgetown Road, besides being the shortest, possesses a great advantage over any other in that it passes through Silver Plume, Brownville, Bakersville, Montezuma, Kokomo, Carbonateville, and other rich and rapidly growing camps. Kokomo already boasts a daily paper, a bank, and other accessories of a mining metropolis; while Carbonateville is putting on similar airs. Distances by stage on this route are as follows: From Georgetown to—

	Miles.	Miles.
Silver Plume.....	2	21
Brownville.....	3	30
Bakersville.....	16	34
Montezuma.....	18	
St. Johns.....		
Kokomo.....		
Carbonateville (or Ten Mile).....		
Leadville.....		



APPENDIX TO THE SECOND EDITION

45 mills now in operation in the vicinity will probably double the product in 1879. The telegraph office takes in \$3,000 monthly; and 1,300 wagons, each drawn by from four to eight head of horses or mules, are busy hauling supplies from the railroad and ore back. It is estimated that, with no increase of population, the sales of merchandise will aggregate \$5,000,000 this year.

Real Estate and Rents.—The appreciation in value of Leadville real estate is almost beyond belief and rents of business houses are simply fabulous. Fortunes are made daily in lot speculations. The land on Chestnut street (the principal thoroughfare) was bought from the Government a year ago at \$2.50 per acre. A few weeks ago a gentleman bought 75 feet front of it for \$10,000 and the next day sold 50 feet of it for the same amount. The Grand Hotel, built on the same street last fall at a cost of \$8,000, was sold in a few months for \$14,000, and to-day the same property can not be bought for \$40,000. Nine lots were lately sold in the suburbs for \$1,500. Within twenty-four hours the party who bought them was offered \$3,000 for his bargain. Lots on Chestnut and Harrison streets which sold a year ago at \$1 per foot front are now eagerly taken at \$150 to \$200 per foot.

The Theatre Comique, a one-story frame shell 50x100, rents for the enormous sum of \$1,700 per month, or over \$20,000 per year, and the receipts here run up to \$1,200 per night. A log house opposite, 25x50 feet, rents for \$700 per month. The City Hall Building on Chestnut street, by no means an extensive or ornate affair, rents for \$7,200 per annum.

EXPENSES OF LIVING, WAGES, SOCIETY, CHURCHES, ETC.

The rapid extension of railways and the improvement of wagon roads will reduce prices quoted below to quite an extent by autumn, '79:—Flour is from \$5 to \$6 per cwt.; potatoes 5 cents per pound; butter 40 cents; eggs 25 cents per dozen; sugar (white) 15 cents per pound; hams 15 cents; bacon 14 cents; fresh meats from 13 to 25 cents; coal oil 70 cents per gallon; syrup \$1.50 per gallon; lard 15 cents per pound; fresh milk 20 cents per quart; wood from \$4 to \$6 per load; hay from 5 to 6 cents per pound; oats 6; feed 6; native lumber \$40 per thousand; shingles from \$6 to \$8 per thousand; brick \$40 per thousand; lime 75 cents per bushel; furnished single rooms \$5 to \$8 per week; board \$7 to \$10. Miners report that they "bach" in a cabin for \$4 per week and live well. Washing \$2 per dozen—(no Chinamen here); doctor's visits, \$3; saddle horses, per day, \$3.50; freights from railroad terminus 3 to 5 cents per pound; insurance is 10 per cent. First class hotels of which the Clarendon is probably the very best, charge from \$3 to \$4 per day transient custom, or from \$15 to \$25 per week for permanent boarders. It is difficult to rent dwellings, and small ones of four or five rooms command from \$40 to \$75 per month. Clothing is from 25 to 40 per cent higher than at Chicago or St. Louis.

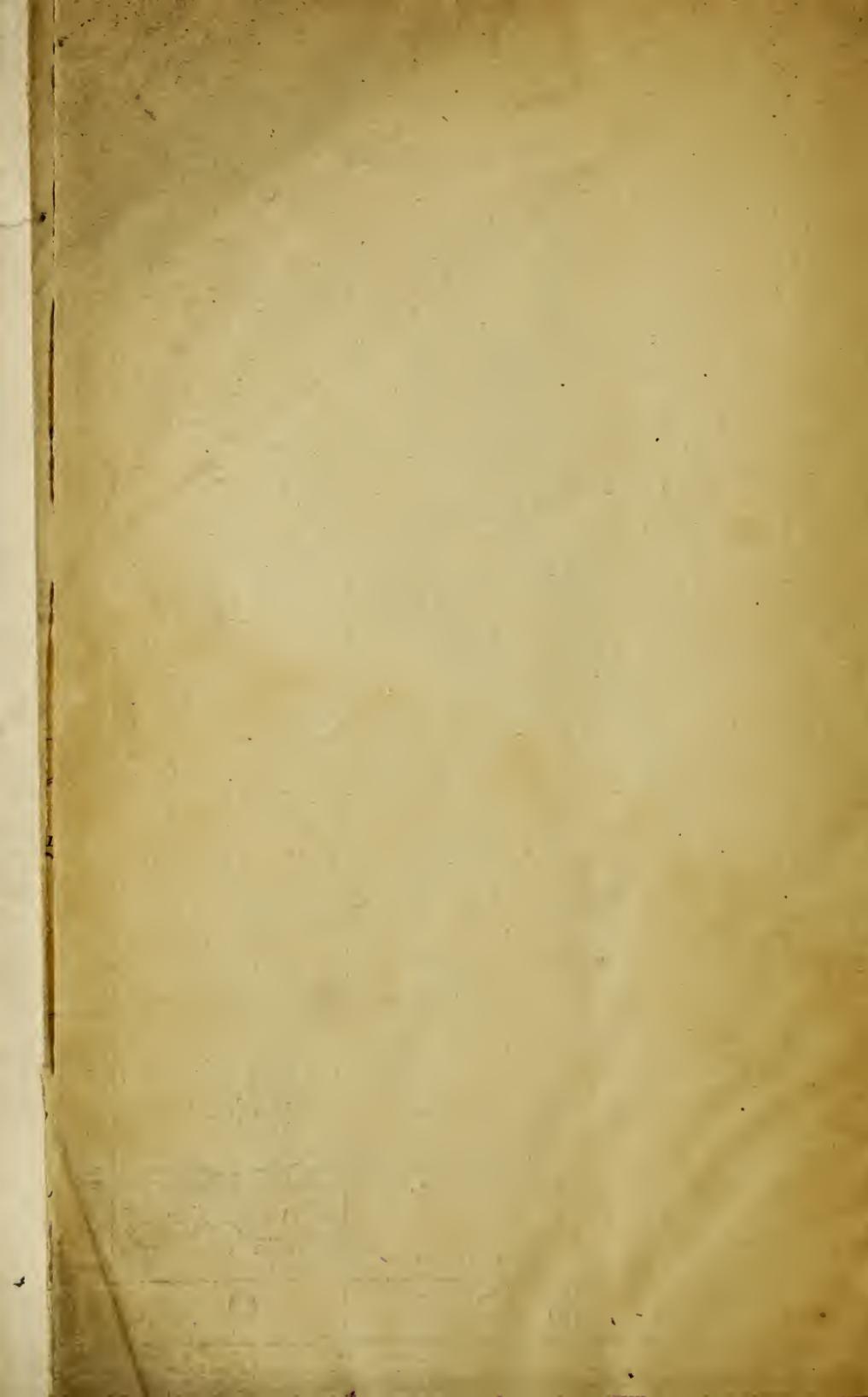
Employment and Wages.—Willing men have thus far easily found employment at Leadville. Miners get \$3 to \$4.50 per day carpenters, masons and blacksmiths, from \$4 to \$5; wood-choppers, \$3; laborers, \$2.50 to \$3; barkeepers, \$25 per week; waiters, \$10 to \$12, with board; clerks in stores and banks, \$60 to \$200 per month; female domestics, \$30 to \$50. Street teams are paid \$9 per day. At hauling ore teamsters load fully 4,000 pounds per trip, and their contracts are so made as to give them \$9 to \$10 daily gross earnings. Foremen at mines get from \$100 to \$125 per month. Wages at the furnaces are as follows: Furnace men (keepers) \$3.50; chargers, \$3 to \$3.50; suppliers and helpers, \$3. The veins already opened, while yielding fortunes to their owners, afford employment to large numbers of men.

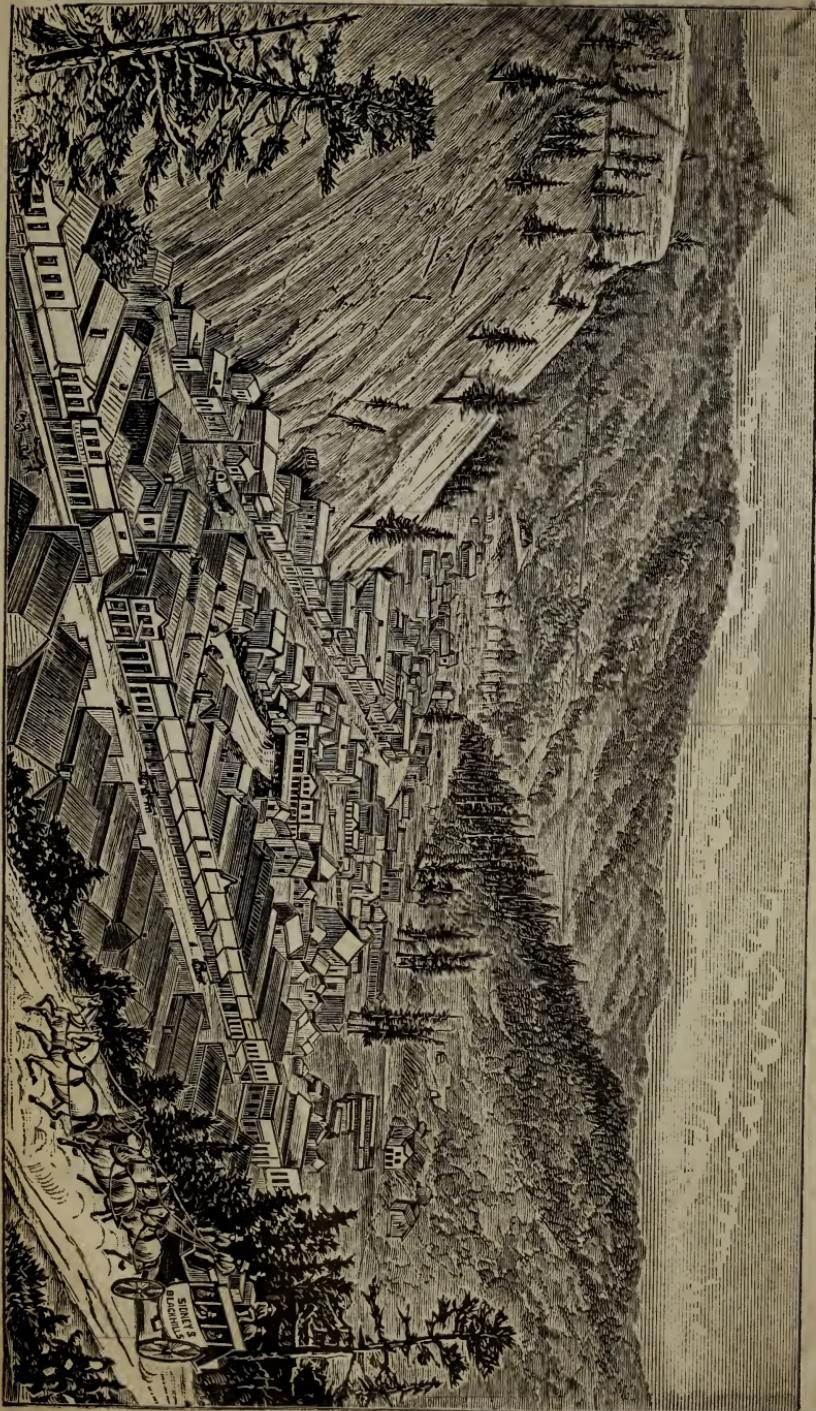
Societies, Churches, and Schools.—Considering Leadville's heterogenous population, the good order that prevails is especially noteworthy. The city contains many ladies of cultivation and refinement. Five church organizations exist, viz: Baptist, Episcopal, Catholic, Methodist, and Presbyterian; the latter three have each a church. The public school building measures 30 x 50 feet, and is, of course, like everything at Leadville, "jam full." A private school is starting. The Young Men's Christian Association has an organization. The Masons and Odd-Fellows have each a lodge. There are two circulating libraries.

ROUTES, RATES, DISTANCES, ETC.

As a new stage road from Georgetown is now opened to Leadville, the Union Pacific Railroad offers its travel the choice of two routes: First, from Omaha to Georgetown by rail, time 36 hours, thence to Leadville by stage, distance 54 miles, time 10 hours; Second, from Omaha to Denver, and thence to Como, the terminus of the Denver, South Park & Pacific, by rail, time 40 hours, thence to Leadville, 50 miles by stage, time 12 hours. Fares from Omaha are: First class, \$41; emigrant, \$34. The Georgetown Road, besides being the shortest, possesses a great advantage over any other in that it passes through Silver Plume, Brownville, Bakersville, Montezuma, Kokomo, Carbonateville, and other rich and rapidly growing camps. Kokomo already boasts a daily paper, a bank, and other accessories of a mining metropolis; while Carbonateville is putting on similar airs. Distances by stage on this route are as follows: From Georgetown to—

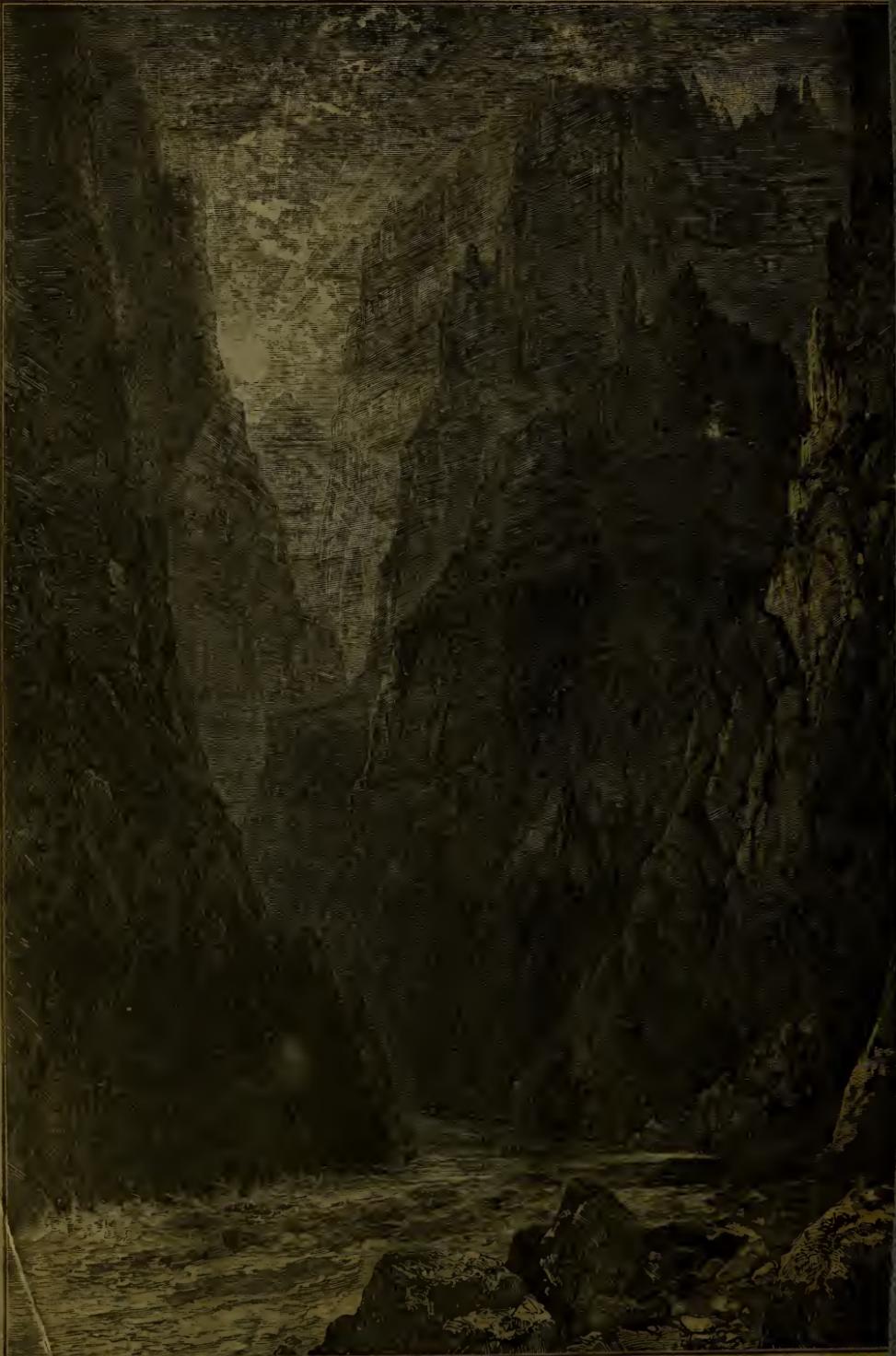
	Miles.		Miles.
Silver Plume.....	2	St. Johns	21
Brownville	3	Kokomo	30
Bakersville.....	16	Carbonateville (or Ten Mile).....	34
Montezuma.....	18	Leadville	54





DEADWOOD, DAKOTA.

REACHED VIA UNION PACIFIC RAILROAD AND SIDNEY STAGE LINE.



GRAND CAÑON OF THE COLORADO.

REACHED VIA THE UNION PACIFIC AND UTAH SOUTHERN RAILROADS.

